

EARTH NEWS

THE ORIGINAL GUIDE TO LIVING WISELY

DECEMBER 2014/JANUARY 2015

HOMEMADE ONE-POT MEALS

How to Source HIGH-QUALITY SEEDS

Back to Basics

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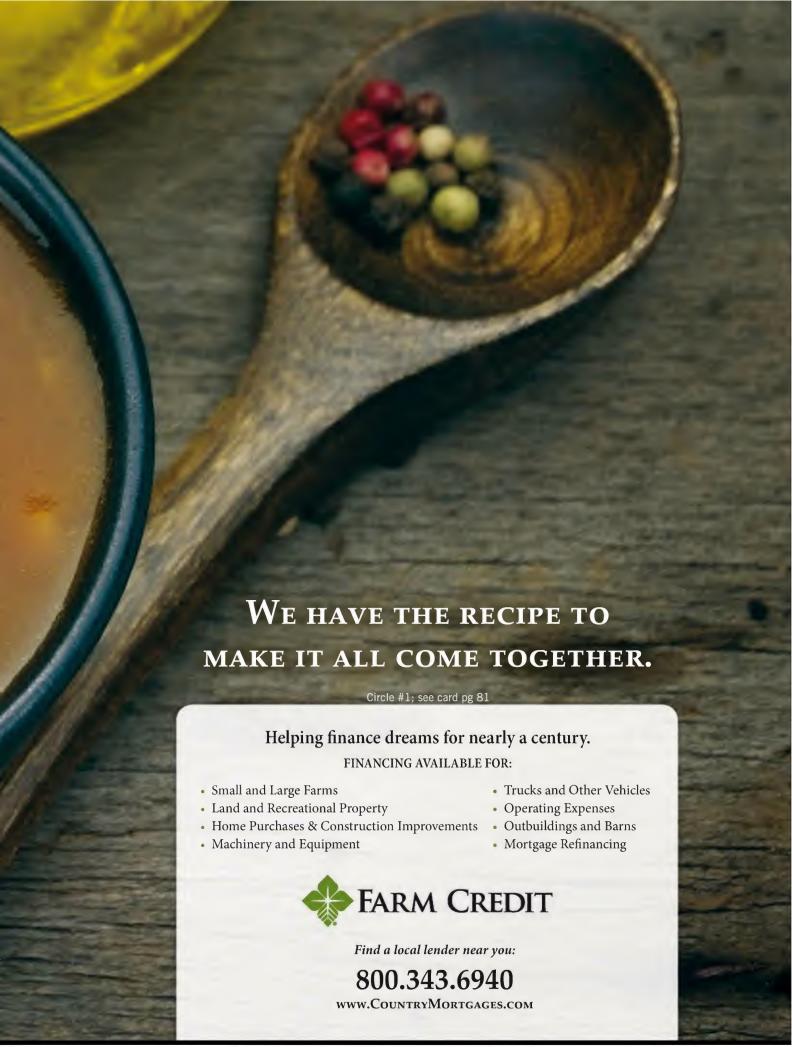
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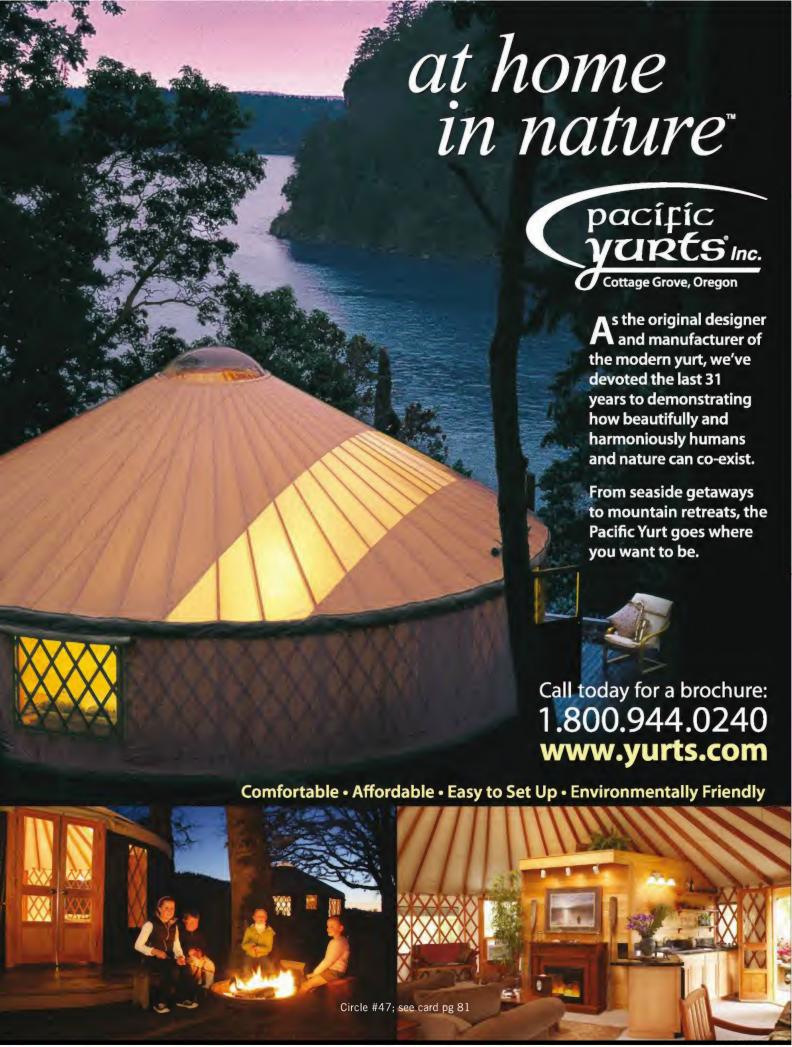
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The Death of Small Towns: Another High Price of Industrial Meat

Create an easy, comforting dinner in your slow cooker with this one-pot Chili With Cornbread Recipe (Page 47).









ERIN KUNKEL; COVER: BEN PIEPER/50 SIMPLE SOUPS FOR THE SLOW COOKER



MARGARET ROACH/AWAYTOGARDEN.COM



TRISH HAVEMAN: RIGHT: FOTOLIA/CIAOBUCAREST





MORE THAN A MAGAZINE ... A WAY OF LIFE

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25 Sourcing Truly High-Quality Garden Seeds

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Expert Tips for Growing Early Tomatoes

Add about a month to your fresh-tomato season with these proven techniques.

Back to Basics: Make Your Own Shampoo, Deodorant and Toothpaste

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Making Hay the Old-Fashioned Way

A little muscle and a few hand tools are all you need to put up tons of provender.

Another High Cost of Factory-Farmed Meat: The Death of Small Towns

The near-monopoly of industrial meat companies prevents healthy competition and crushes small-town economies.





BARBARA DAMROSCH





ERRY JOHNSON; BELOW: JERRY PAVIA





MORE THAN A MAGAZINE ... A WAY OF LIFE

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Savvy Seed Advice & Meat Monopoly Insight

MOTHER'S NEW Tomato Chooser

app lets you select from

more than 330 varieties.

n this issue, we examine three topics - growing tomatoes, choos-Ling garden seeds and critiquing industrial meat—through compelling new lenses.

1. In "Expert Tips for Growing Early Tomatoes" (Page 38), Barbara Pleasant reveals the handful of tomato varieties that are top choices for super-early harvests, and explains how to nurse seedlings and enjoy harvests a month or more ahead of schedule.

To help you explore the wide world

of tomatoes, we're proud to announce our new Tomato Chooser app. This app profiles 333 varieties and lets you choose by color, size, best flavor, disease resistance and more-go to www.MotherEarthNews. com/Tomato-Chooser.

Did you know that there are even tomatoes bred especially to

ripen indoors, off the vine? You can pick these types before frost arrives and then enjoy them well into winter. Just think—if you supplement your usual summer favorites with a couple of super-early varieties from Pleasant's article and a winter storage variety from the Chooser, you can expand your fresh, homegrown tomato season by several months.

2. Speaking of what to grow in 2015, this issue includes a special report by Margaret Roach on Page 25 about garden seeds - info you'll find useful as you dive into seed catalogs. What's that? You say you usually just grab seeds off the rack at the hardware store? If you don't spend a few cozy winter weekends perusing seed catalogs, you're missing out on part of the fun of gardening - plus you can learn so much by reading the top-notch catalogs. Roach

explains how to find the companies producing the best seeds for organic gardeners, and covers why heirloom seeds aren't necessarily your top choice.

3. Also in this issue, veteran reporter Chris Leonard reveals how the Tyson industrial chicken empire works. Most of us are aware of the multiple concerns connected with raising livestock on factory farms, but what you may not realize is how much harm these "vertically integrated" meat and egg production systems inflict on rural communities.

> In "Another High Cost of Factory-Farmed Meat: The Death of Small Towns" on Page 52, Leonard explains why a handful of powerful companies would prefer that the public remain unaware of the hidden social costs of meat monopolies. We learned just how much power these companies

wield when we went looking for photos to accompany Leonard's report. Even though this kind of request is routinely fulfilled, in Arkansas—Tyson's stronghold—the largest newspaper declined our request for photos. Surprised that Tyson's influence could shut down access to newspaper files, we contacted a freelance photographer. She agreed to take pictures, but only if we would not publish her name.

Unbelievable. Tyson's influence is so pervasive that even obtaining pictures of its facilities is difficult. The best way to counter these meat monopolies is to produce your own if you can, or buy from local, independent producers. And share Leonard's report with your friends; the more that people reject industrial meat, the stronger the demand for a better food system will become.

-MOTHER

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"Your instructions were simple enough that even a novice builder like me was able to understand them."



Reader Patrick Payne built Mother's sturdy workbench for his workshop.



Respecting Diverse Views

We read Mother Earth News cover to cover as soon as it arrives in our mailbox. Bryan Welch's article "Great Gardens, Pure Food and Clean Energy: The Ties That Bind' (February/March 2014) was so refreshing. We are on the conservative side of the political spectrum—the less government involvement, the better-yet we know our way of living isn't possible for everyone. Others have wants and needs that require a point of view that's different from ours.

We've attended the Mother Earth News Fair in Puyallup, Wash., for the past four years, and, while there, we're always conversing with other attendees. It never crosses our minds to judge anyone or wonder whose political views line up with ours. We're all there to learn something.

There are few places these days where the media isn't trying to interject a political stance. Thank you for letting readers make up their own minds without the "I'm right and you're wrong" drama.

We are determined and conscientious. Arlene and Bill Frank Decatur Island, Washington

Pleased With Pressure Cooker

Thank you for inspiring me to try pressure cooking with your articles on the topic. Last autumn, I set about researching electric pressure cookers. My goals were to avoid getting the windows of my cabin drenched in condensation during winter when I cook rice or beans. and to have the cheapest, safest and quickest way to cook these foods.

My decision was the same as yours: the Instant Pot (Green Gazette, August/ September 2014). It's one of the only pressure cookers on the market that has a stainless steel interior-very important! The Instant Pot met all of my hopes and expectations, and then some.

> Tobin Gray Twentynine Palms, California

Cloth Acclaim

I was interested to read the brave comments from someone who has made the switch from using toilet paper to using cloths (Country Lore, October/November 2014). We've done this too, and, like most moves we've made on behalf of the planet, have found that it's no big deal.

What surprised me, though, was that some people buy cloths. We tore up worn-out sheets for ours. Surely we all have old sheets, towels, shirts, tablecloths, etc., that we can recycle instead.

> Becky Hammond Ferndale, Michigan

Satisfied Builder

I just finished building my first workbench, and I used the plans in your article "How to Build a Workbench" in the February/March 2013

issue. Your instructions were simple enough that even a novice builder like me was able to understand them.

I'm looking forward to many years of projects on my new bench-I think this bench will outlast me!

> Patrick Payne Mesa, Arizona

Collective Responsibility

I found the reader letter "Be Mindful of Your Privilege" (Dear Mother, August/ September 2014) to be

Excited to Sow Seeds

I was impressed by the detailed instructions on how to grow seedlings in Barbara Pleasant's article "Best Tips for Starting Seeds Indoors" on the Mother Earth News website (at http://goo.gl/dcUC9e). I can't thank you enough for giving me the information I need to try indoor germination this spring. Pleasant's writing has increased my excitement and anticipation for the coming season.



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offensive. To me, nothing in the editorial the letter mentioned ("We Get What We Pay For," June/July 2014) or in other articles from Mother Earth News could be construed as "bourgeois experiences." It's all about learning self-sufficiency skills and how to

use resources in a healthy, sustainable manner.

At one time, my children and I were on food stamps. I never gave up my freedom to choose clean, healthful food for my family, however, even if I had to grow it or barter for some of it. Did you know you can buy vegetable seeds

with food stamps? And that many farmers markets have a kiosk for customers to pay with an EBT card?

People in lower economic classes can still be a part of shaping the food landscape through choices and self-

(CONTINUED ON PAGE 78)

A Gathering of Like Minds at the Mother Earth News Fair

Back in September, I attended the MOTHER EARTH NEWS FAIR in Seven Springs, Pa. It was an 11-plus-hour drive down on Friday and an 11-plus-hour ride back home on Sunday—but you know what? It was totally worth it.

It was my first time at one of the FAIRS, and I didn't know what to expect. I knew there would be vendors and workshops, but I had *no* idea. The first thing you realize when you get to the FAIR is that you can breathe just a little easier. You realize, as you look around, that you are among your peeps. These are all people who are interested in what you're interested in—a healthier and more vibrant life.

There was so much to buy (of course, you didn't *have* to buy anything, but you would have needed strong willpower to resist). From handcrafted soaps to carved spoons to fermented foods to farm ma-

chinery, if a sustainable-living enthusiast couldn't find it at the FAIR, then she probably doesn't really need it.

And the workshops: Every hour and a half, a new round of dozens of workshops that were focused on a variety of self-reliance topics would begin—which to choose, which to choose? Every time I sat down to listen to a workshop, it was like being in a classroom, and the know-how being given out was priceless. I found my-self taking page after page of notes.

Everyone—and I mean everyone—wanted to share information and stories. It was a gathering of like minds in the truest sense of the phrase. I can't stop thinking about the things I learned and the experiences I had, and you can bet I'm already planning to go back next year.

> Wendy Thomas Merrimack, New Hampshire



A ski-lift view of the Mother Earth News Fair at Seven Springs Mountain Resort in Seven Springs, Pa., last September.



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The Movement to Divest From Fossil Fuels

Money is shifting away from coal, oil and gas thanks to a growing coalition that's pressuring universities and other prominent institutions to divest from fossil fuels.

Even the heirs of John D. Rockefeller—a man who built a vast fortune on oil—are divesting fossil fuels from the family's philanthropic organization, the Rockefeller Brothers Fund. To date, dozens of foundations and institutions (including the British Medical Association and the Sierra Club), hundreds of churches, 30-some municipalities (including Madison, Wis., San Francisco and Seattle), and at least a dozen colleges and universities (including Stanford University) have decided to divest funds they once held in the fossil fuel industry. Boycotts have worked to spur sweeping social change before, and today's

fossil fuel divestment organizers hope to be as successful as the divestment campaign that played a key role in overturning apartheid in South Africa.

Are these seemingly big moves having a big impact? "I would say it's absolutely working," says Jay Carmona, national divestment campaign manager with 350.org, the nonprofit group leading the way on the divestment efforts. (The number 350 comes from the maximum parts per million, or ppm, of atmospheric carbon dioxide climate scientists agree will maintain our planet's eco-

logical health. The level is already past 400 ppm, and it's rising by about 2 ppm each year.) "Divestment is spreading and becoming more global. Campaigns are launching in Australia and Europe, including in the Netherlands," Carmona says.

Organizers at 350.org launched the Fossil Free project primarily on moral grounds: Investing in companies that profit from burning fossil fuels is morally wrong, they reasoned, even if such investments yield good returns for the investors. Burning coal, oil and gas releases carbon dioxide into the atmosphere, thus contributing to air pollution and climate change. "Fossil fuel companies' profits come from the destruction of communities and the planet," Carmona says.

Divesting isn't just about taking a moral stand, though—it makes long-term financial sense, too. Investors can earn just

as much money by shifting their investments to companies listed in the new Fossil Free Indexes, a set of resources founded by Stuart Braman, former managing director of the Risk Solutions Group at Standard & Poor (S&P). The Indexes are based on the S&P 500, but omit the largest coal, oil and gas companies identified on the Carbon Underground 200 list.

Fossil-free investing also protects portfolios from the obsolescence of fossil fuel resources, Carmona adds, given that many countries are moving to reduce pollution and slow climate change by taxing the burning of fossil fuels—a way to make oil and gas companies pay for the true costs of their business.

The Risky Business Project, co-founded by climate activists and government players, published a report in June 2014 called "A Climate Risk Assessment for the United States."

According to the report, continuing on our current, fossil fuel-dependent path will have grave effects on people and the economy: rising sea levels, agricultural disruption, and risks to labor productivity and human health.

by the Third National Climate Assessment, the authoritative and comprehensive report on climate change and its impacts in the United States, released in May by the U.S. Global Change Research Program. The good news? The report says we can still reduce these

This warning is echoed About 400,000 people rallied to demand climate change action during the People's Climate March in New York City in September 2014.

> risks by aggressively adapting to climate change and reducing carbon emissions.

> The fossil fuel industry has "five times as much carbon in its reserves as it would take to break the planet," wrote Bill McKibben in Rolling Stone in his open invitation to attend a massive climate demonstration in New York City in September 2014, which coincided with the U.N.'s Climate Summit. Keeping that carbon out of the atmosphere was paramount for the 400,000 people from around the world who marched through the city.

> "I think it signifies new territory," Carmona says of the diverse coalition that came together for the march. "It's just the beginning."

> > — Joanna Poncavage

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B Corps: Businesses Doing Good

Since the Industrial Revolution, business has been characterized by the single-minded pursuit of one goal: profit. Economic fundamentalists, such as Milton Friedman, considered a manager's focus on any other priority heretical. But an increasing number of customers and businesspeople are now demanding more from companies. They want businesses to do good in the world, as well as for shareholders' pocketbooks. Companies such as Ben & Jerry's, Etsy, Method, Patagonia, and Seventh Generation have made their social and environmental missions a visible part of their public identities and their marketing messages. Of course, over the years, a lot of companies

have claimed to do good in the world without anyone checking their claims. Until recently.

Enter the B Corporation, or "B Corp." All the companies named above, plus Dansko shoes, King Arthur Flour, New Belgium Brewing Co., Numi Tea and more than a thousand others, are certified B Corps. Ogden Publications, owner of MOTHER EARTH NEWS, is a B Corp, too.

To become a B Corp, companies must pass a rigorous certification process managed by an independent nonprofit, called B Lab. The process examines how a company treats its employees, how transparent its practices are for customers, how its deci-

sions and practices affect the environment, and how actively the company works to improve the communities in which it operates. Sample questions from the assessment are published on the B Corps website (www.BCorporation.net), as are a complete listing of B Corporations and the score each business has earned. Questions cover a wide range of concerns, from "Has the company worked to develop social and envi-

ronmental standards for its industry?" to "What percent of energy used is from renewable on-site energy production?" and "Based on the results of your employee satisfaction assessment (conducted within the past two fiscal years), what percent of your employees are 'satisfied' or 'engaged'?"

"We wanted to create a way for conscientious businesses to assess themselves, as well as a way for them to communicate their actual impact with credibility," says B Lab co-founder Jay Coen Gilbert. "We knew our system would need to be both rigorous and transparent."

In addition to recruiting more than 1,100 B Corps in 35 countries since B Lab started in 2006, the organization has been active in passing "benefit corporation" legislation in 27 states, with more on the horizon.

A legal designation as a benefit corporation allows companies to incorporate mission objectives into their business strategies. In a conventional business, managers and directors could be sued by shareholders if they make a decision for reasons other than shareholder earnings. If, for instance, a CEO and a board of directors refuse to sell their company to the highest bidder and favor a lower bid from a buyer better aligned with their

values, they could be sued by shareholders and forced to sell for the highest possible price. The directors of a benefit corporation, on the other hand, would be able to wait for a buyer that would maintain their company's values. In fact, they would be under a mandate to do just that.

The legislation that designates benefit corporations lets founders set customized objectives for their companies, such as those related to environmental causes, social improvement, community development and employee advancement. Benefit corporations must adhere to those objectives so long as the bylaws survive—a revolution-

> ary opportunity for publicly traded companies whose shareholder rosters change frequently.

When you invest in a B Corp, you're investing in the company's values as much as in its balance sheet. "We want to empower businesses to change the world," Gilbert says. "And, because of the leadership of B Corporations, we think the world is changing for the better."

-Bryan Welch



Declaration of Interdependence

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the change we seek™



Workers at B Lab and Kregel & Co., a B Corp in Pennsylvania, partnered with the nonprofit MANNA to bring free meals to people battling life-threatening illnesses. Such community outreach aligns with the B Corp principles (top).



New Toolkit Connects Local Food to the Workplace

Sourcing locally grown food just got easier. The new digital toolkit "Developing a Worksite Food Box Program" is aimed at employers who want to make a regular supply of healthy food more accessible to their employees. The kit presents an experimental model for aggregating local farm products and coordinating the delivery of food boxes to employees right at their workplaces.

Produced by the Leopold Center for Sustainable Agriculture, Iowa State University Extension and Outreach, and the Iowa Food Hub, the publication describes the benefits of setting up a workplace food-box delivery system, profiles the Worksite Food Box pilot program implemented by the Iowa Food Hub in northeastern Iowa workplaces, and offers guidance for setting up a similar program in other locations.

The experience provided to customers by the Iowa Food Hub is much like that of joining a community-supported agriculture (CSA) program, and the majority of the food-box customers are new to local foods. By making its food boxes more convenient for people to receive—with workplace drop-offs and flexible, week-to-week ordering—the program has been able to recruit shoppers who might not otherwise buy local.

"Developing a Worksite Food Box Program" is the first toolkit in a series designed by the participating organizations to share knowledge gleaned from work and research on local foods in northeastern Iowa. All the toolkits function as case studies, and though they are not necessarily applicable to all situations, they provide examples of models that could be adapted to many other communities. Upcoming toolkits will cover other projects related to food hubs, including farm-toschool programs. Access the Worksite Food Box toolkit at http://goo.gl/BbTK6u.

— Leopold Center for Sustainable Agriculture



Worksite food boxes provide local produce, dairy and meat.

First-Rate Reads

With a bite in the air and much of the earth sound asleep, winter offers the perfect time to curl up with some good how-to books while scheming and dreaming about next year's garden and homestead projects. Need some to add to your stack? For more than 15 years, the American Horticultural Society has been recognizing outstanding gardening books with its annual Book

The Four

Gardener's

Season Farm

Cookbook

Barbara

Jamrosch

Eliot

Award. Books are judged on writing style, authority, originality, accuracy and design. Apples of North America by Tom Burford, The Four Season

Farm Gardener's Cookbook by Barbara Damrosch and Eliot Coleman, and The Resilient Farm and Homestead by Ben Falk took top honors this year. To order any of these three terrific titles, turn to Page 63.

-Shelley Stonebrook

Compact Combine

Tired of the ever-increasing prices of grain for your livestock? Or, do you long to grow your own organic grains for baking, and maybe for making flour to sell to your friends or a local bakery? Consider adding a Boaz mini-combine to your stock of homestead tools. This two-wheeled, 13-horsepower unit cuts, threshes and bags wheat, oats, rye, rice and more at a rate of about 1 acre per six hours. The mini-combine costs \$7,500, but you could bring down the cost per farm by joining up with several neighbors to buy one to share. Or, perhaps you could buy a unit and then rent it to other grain growers in your community. Read more about this small combine and

watch videos of how it works at www.EQMachinery.com.

-Cheryl Long

Winning Woodstoves

When frost starts to collect on your windowpanes, your first instinct may be to crank up the thermostat. Unfortunately, higher gas bills-and higher fossil-fuel usage—tend to accompany that uptick of the dial. An alternative would be to heat your home

in Washington, D.C., challenged

with wood, and thanks to modern woodstove designs, you won't have to sacrifice efficiency for self-sufficiency. The Wood Stove Decathlon, held in November 2013

those modern-day woodstoves to bring the heat by competing in a handful of categories: low emissions, high efficiency, innovation, affordability and more. The first-prize winner was the Ideal Steel Hybrid stove produced by Woodstock Soapstone. This hybrid stove has a catalytic combustor and a secondary combustion system. A durable body of steel, cast iron and soapstone gives it a sleek look while also allowing it to retain its thermal mass—and the steel helps keep the cost down, with the base model starting at \$1,795. A wide range of woodstove technologies flaunted their flues at the event, from catalytic hybrids to masonry stoves (which had some of the highest scores for efficiency and cleanliness). Stoves from Travis, Wittus, and New England Hearth & Soapstone took the runner-up spots in the decathlon. To learn more about the leading woodstoves and the other models that competed, go to http://goo.gl/rMgiWm.

— Amanda Sorell





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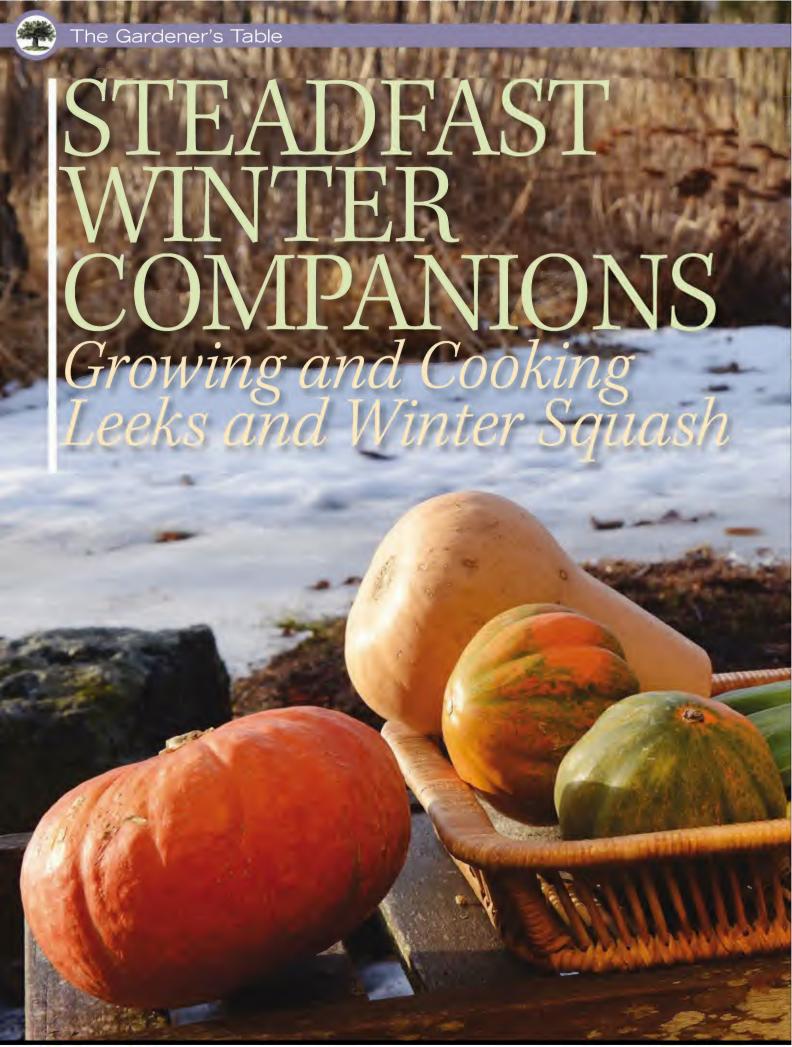
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These two cold-weather dinner favorites will bring rich flavors to your table.

Story and photos by Barbara Damrosch

or gardeners who like to feast on their garden's bounty year-round, winter squash holds a special honor because it doesn't require a root cellar. A shed in which nothing will freeze or just a cool room in the house will keep squash in great condition for three to six months, depending on the variety. Unlike root cellar crops—such as potatoes, carrots and beets, which demand a high-humidity storage space—squash like the air to be dry, as it often is in our homes in wintertime.

Leeks are another hero crop for winter eating. Related to both garlic and onions, their subtle onion flavor enhances braises and stews, but they are also superb served all by themselves.

Winter Squash, Both Large and Small

Growing winter squash is just like growing summer squash. You can either direct-seed or put out transplants no more than 3 weeks old. Winter squash just takes up a lot more space—most varieties grow on wandering vines that can overwhelm a small garden. They make a terrific ground cover, however,

if you direct those vines into a littleused area, shading out nearly all weeds by harvest time. (For more tips on cultivating this crop in your garden, see "All About Growing Winter Squash" at http://goo.gl/7Ydh8l.)

Just be sure to pick squash before your first hard frost and spread them out in a warm, dry place to cure for a few weeks—to harden off their skins for better keepability. Handle them carefully, because nicks and bruises in the skin will shorten their storage life.

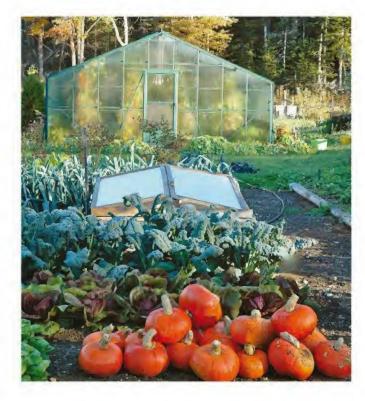
You can grow so many wonderful types and varieties of winter squash, beginning with the basic beige butternut,



so high in rich, tasty, orange flesh and so low on stringy seeds. It's the one type I'd grow if I could grow only one, and one might be all you can manage. But some year, try a small acorn or delicata type, both of which I've even trained to climb a stout wooden trellis!

'Buttercup' (see the squash-as-soup-tureen pictured on Page 22) and 'Red Kuri' (shown at right) are also on the small side, and both are gorgeous. Just for fun, you might try one of the grand old giants, such as 'Blue Hubbard,' or the splendid vermillion-colored

'Rouge Vif D'Etampes.' Also known as 'Cinderella' because of its deeply lobed shape, 'Rouge Vif D'Etampes' isn't quite big enough to ride in but can easily feed 20 people.



Pumpkins, which botanically are no different from winter squash, can be delicious, too, but look for the cooking varieties, often called "pie pumpkins," not the larger "field pumpkins," which Brilliant 'Red Kuri' squash are ready for winter storage. Its flesh is smooth textured and richly flavored.

are the kind bred for jacko'-lanterns.

How to cook winter squash is up to you. Squash can be baked, cut into chunks and roasted for extra-nutty flavor, or simmered in water and puréed. Cooking them is the easy part. Most winter squash are hard to peel (though some people use a wide vegetable peeler), so I almost always peel them after cooking, when the skin

separates easily from the flesh. That flesh - dense and rock-hard before cooking—can be a challenge to cut up. My trick when cutting one raw is to drive a kitchen cleaver into the squash

Leek Gratin: A Classic, Comforting Casserole

A gratin is a creamy casserole, usually with a crust on top that consists of cheese or breadcrumbs or both. You can make a gratin from pretty much any vegetable, but some are particularly ennobled by that treatment, and leek gratin is one of my favorites. Yield: 6 servings as a side dish, 4 as a main course.

4 cups chopped leeks (about 1 large bunch) white and pale green parts only 4 tbsp butter, divided 4 large eggs 2 cups whipping cream 1/2 tsp nutmeg 1/2 tsp salt Generous grating of fresh black pepper 4 ounces Gruvère cheese (or cheddar)

 $1^{1/2}$ cups bread (about 2

slices)

Preheat the oven to 350 degrees Fahrenheit.

Split the leeks lengthwise, and rinse away any grit. Then cut them crosswise into 1-inch pieces. Melt 2 tablespoons of the butter in a medium skillet or saucepan, and

then add the leeks and a halfcup of water. Bring to a simmer over low heat and cook, covered, until the leeks are soft and tender and the water has evaporated. Check them frequently and stir to prevent browning, adding a little water



A creamy leek gratin is especially good as a side dish to roasted meats, but can also stand alone as a meatless main course.

as needed to keep them from sticking to the pan. When they're done, after about 15 minutes, arrange in a baking dish and set aside.

Beat together the eggs, cream, nutmeg, salt and pepper, and pour the mixture over the leeks. Grate the cheese and sprinkle over the top. Melt the remaining 2 tablespoons of butter. Remove the crusts from the bread, tear into pieces, and grate into coarse crumbs, and then toss with the butter. (A good way to do this is to process torn pieces of bread in a food processor or blender while pouring in the melted butter.) Sprinkle the crumbs on top of the cheese.

Bake in the middle of the oven for an hour or until a knife inserted in the center comes out clean, and the gratin is golden brown. Serve warm.

by pounding on the back of the blade with a rubber-covered mallet I keep just for kitchen use.

Onions' Cousins: Mellow Leeks

Start leeks in late winter under fluorescent lights, or look for seedlings at garden centers and farmers markets in spring. Such spring-planted leeks germinate and grow fast, but aren't as large as autumn leeks, which are planted in late summer. Good summer leek varieties include 'King Richard' and 'Megaton,' while good autumn leek varieties include 'Lancelot' and 'Tadorna.' Winter varieties, such as 'Bandit,' 'Blue Solaise' and 'Siegfried,' can exceed an inch in diameter.

Winter leeks can be left in the ground to mature in spring. Light frosts won't hurt them, and in mild climates, typically Zone 8 and warmer, they can spend the entire season in the ground to be dug when needed. For summer and early fall eating, grow a summer variety; for winter, choose one of the blue-tinted, cold-tolerant types. Drive through the European country-



To grow blanched leeks, poke deep holes in the ground, set in the leek seedlings, and let the wind and rain do the work of covering them up.

side in wintertime, and likely you'll see patches of upright, blue foliage, there for the digging.

A garden fork is the tool you'll need to pry leeks loose. If your soil is deep and fluffy (congratulations!), you may

be able to just grasp the leek near the ground and pull. Feel free to rob an early planting for baby-sized leeks as needed. In areas where the ground freezes solid, leeks can be harvested in late fall and then kept in the root cellar



Spaghetti squash makes a savory side dish when it's sauced with sage, butter and walnuts.

Spaghetti Squash With Walnuts

Unique among squash, spaghetti squash breaks up into pale yellow, pastalike strands when the flesh is scraped with a fork after cooking. It has a wonderfully light, tender, but almost crunchy texture. I like to treat it simply, as in this version with walnuts and butter. The squash can be cut in half for baking, but the flesh is more moist and tender when cooked whole, either by baking or boiling in water. Yield: 6 to 8 servings as a side dish.

1 large spaghetti squash or 2 smaller ones (about 4 pounds)

1 tbsp olive oil or other cooking oil

1/2 cup walnuts, coarsely chopped

6 tbsp butter

2 tbsp fresh sage, coarsely chopped

Heat oven to 350 degrees Fahrenheit.

Smear the oil on a rimmed baking pan. Set the squash on it and bake until the flesh is tender when pierced with a skewer or a knife (about 1 hour). Test frequently, because over-baking can make the flesh soggy and prone to clumping.

When done, cut the squash in half lengthwise and let it cool slightly to the point where it doesn't burn your fingers. Remove the seeds and the orange strands that connect the seeds to the lighter flesh. I find that pulling on the seeds with one hand while using a knife to cut the strands with the other does the trick.

While the oven is still on and the squash is cooling, spread the

walnuts out on a baking sheet and toast them for about 10 minutes, or until fragrant but not browned. Melt the butter in a small pan over low heat and cook until the foam subsides, and then add the sage and sizzle for about 2 minutes, until the leaves are slightly crisp but not browned.

Fork out the flesh of the squash into a shallow serving bowl by dragging the tines of a fork though it. Do this carefully and thoroughly, as it's the key to making this dish look just like a bowl of thin spaghetti - or capellini, to be more precise.

Arrange the strands nicely in the bowl and pour the butter and sage over them. Sprinkle the walnuts on top and serve warm.

for a month or two. I also keep a stash handy in the fridge, because they don't take up a lot of space after trimming. In either spot, they will eventually start to elongate and form a hard core that would become a flower stalk. At that point they're no longer of much use.

If you've wondered how to cook leeks, the pale green part inside the white outer layers is tender when cooked, but the tough, dark-green tops are only good for flavoring a stock and should be strained out afterwards.

The standard way to blanch leeks is to plant them in a trench to get a long white shank. That's what a cook demands.

At our farm, however, we make 9-inch-deep holes with a crowbar or

bulb dibber and then drop a leek seedling into each hole, with only an inch or so of green showing aboveground. The seedlings get light for growing, but by season's end, the holes have gradually filled with soil, thanks to the actions of wind, worms and our cultivating hoe. The result is a long, white leek, ready to be baked, braised, simmered, or added into whatever soup, stew or casserole - in any recipe that can benefit from leeks' silken texture and unassuming oniony flavor. (Learn more about how to grow leeks in "All About Growing Leeks" at http://goo.gl/5aFRfJ.)

They come out cleaner with our blanching regime, but all leeks need a

thorough cleaning. Slice them lengthwise to rinse grit from between the concentric layers.

Leeks are never eaten raw, and you should always take care in cooking them, lest they burn beyond a pleasant, caramelized light brown. 📽

Esteemed garden writer Barbara Damrosch farms and writes with her husband, Eliot Coleman, at Four Season Farm in Harborside, Maine. She is the author of The Garden Primer and, with Coleman, of The Four Season Farm Gardener's Cookbook. Both are available on Page 63.

Elegant Thai Soup, Cooked in a Squash

This hearty, spicy winter squash soup can be made right in the squash itself and ladled out into bowls at the table, with no need for a serving dish. The flesh of the long-cooked squash gives it a robust texture, and the coconut milk adds richness. You can try this with other winter

squash soups as well. Yield: 6 servings.

1 round, somewhat-flat squash, such as 'Buttercup' (about 4 pounds)

2 cups chopped leeks, white and pale green parts only

2 tbsp butter

Pinch of salt

1 tbsp Thai red curry paste

 $1^{1/2}$ cups chicken broth 1 can unsweetened coconut

milk (11 ounces)

Preheat the oven to 350 degrees Fahrenheit.

With a sturdy knife, carefully cut a circle in the top of the squash as if you were making a Halloween pumpkin. Make the hole wide enough to accommodate your ladle. Discard the stem and lid, remove the seeds from the squash and set the squash aside in an oiled baking dish or ovenproof glass pie plate to catch any drips or leaks during baking.

Chop the leeks coarsely and sauté over medium heat in a large skillet with the butter and a pinch of salt for 10

minutes, or until the leeks are tender and translucent but not browned. Add the curry paste and stir until well-mixed.

Bring the chicken broth to a simmer in a saucepan and add 1 cup of it to the leeks; set the rest aside. Pour the leek mixture into the squash. In another pan, bring the coconut milk to a simmer and stir until the thick and thin parts have mixed. Pour into the squash and stir gently. If there is room, add the rest of the chicken broth as well. The liquid should rise no higher than a half-inch below the top of the squash.

Place the squash in the oven and bake for about an hour or until the flesh is soft but the squash has not begun to collapse.

Gently scrape most of the flesh from the sides in small spoonfuls and stir it into the soup, being careful not to puncture the skin. Add salt as needed, to taste.

Keep warm until ready to eat and serve with a ladle or large spoon.



This satisfying soup is served directly from the squash that it cooks in, which makes the squash both ingredient and tureen.



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Sourcing Truly HIGH-QUALITY GARDEN SEEDS

Some companies deliver better-quality seeds than others do. Get tips on where and how to shop for seeds, and learn about the pros and cons of heirloom, hybrid and open-pollinated varieties.

By Margaret Roach

fter growing my own vegetables organically for 25 years, I recently hit a run of more than my usual share of garden flops. Were the crop failures my fault, or could I blame the weather? Had I been choosing the wrong

seeds? I decided to investigate by interviewing multiple seed experts for my website (www.AWayToGarden.com), which led me down a path full of surprising discoveries. I've come to see, in a new light, that every successful and resilient garden starts with high-quality seeds that are matched to the garden's growing conditions.

Seeds Are Alive

Think about it: How many other consumer sectors deliver living embryos by mail, or set them out on an in-store rack? Seeds are alive and they adapt, meaning they're greatly influenced by the environment in which they were originally bred and the way each generation of seeds was





The best seeds come from careful breeding projects, such as this tomato project underway at the Hudson Valley Seed Library in New York (above). Get off to a strong start by filling your seed box with varieties bred for your region and for organic growing systems (left).

produced. They evolve in response to their surroundings more than we realize. These adaptations are based on obvious factors, such as climate, but also on cultural factors, such as whether the seeds were given a diet of chemical fertilizers. As a result, packets from 10 different seed companies may list the same variety name on their covers, but what's inside wasn't necessarily created equal. A 'Brandywine' tomato isn't a 'Brandywine' isn't a 'Brandywine.'

When seed shopping, therefore, your most important question should be, "Will this living thing feel at home in my garden?" Meaning: "What's this particular seed adapted to?" But you can't know that unless you know the original source of the seed, which, surprisingly, is often not its seller. Many companies are actually resellers and not plant breeders or even seed farmers. You need to know who bred the seed, as well as where and how.

Open-Pollinated Seed

With open-pollinated (OP) varieties, including heirlooms, careful seed sourcing is especially critical. Many gardeners like to save seed year to year, so they choose openpollinated varieties that allow for that. An OP is "a living, breathing organism that, unlike a hybrid, is meant to evolve over time," says Micaela Colley, executive director of Organic Seed Alliance (OSA), which fosters ethical seed stewardship and the revival of regional breeding. As long as pollen isn't shared between different varieties within the same species, the resulting open-pollinated seed will remain true to

type and will produce a next generation that looks mostly like its parent plant.

That's not the case with hybrid varieties, which are created through deliberate crosses between two genetically distinct, homozygous (highly inbred) parents. This hybridization results in uniform plants with sought-after traits - disease resistance, for example. A hybrid plant's seeds will not grow true to type, but will instead produce a next generation that expresses an unpredictable range of traits. That means, with hybrids, customers must purchase new seed annually (again, because the plants' offspring won't resemble its parents). In about 1950, hybrids became popular with farmers, in part because of their uniformity. Imagine discovering, for the first time, commercially convenient, cost-saving traits, such as a field of onions or broccoli all ready for harvest at once. These desirable traits were quickly adopted, allowing for ever-bigger monocultures.

Open-pollinated seeds, by comparison, are loaded with potential variability and diversity, because their seed is produced by pollen flowing freely between all the genetically similar parents (as opposed to deliberate crosses, as in the production of hybrids). Thus, producing quality OP seed requires diligent management of each year's seed crop: roguing out weaklings and individuals that veer off course, while also selecting for plants that show improved vigor or disease resistance. According to expert breeder and OSA co-founder John Navazio, who recently became manager of plant breeding at Johnny's Selected Seeds in Maine, if you don't maintain OPs year in and year out, and re-select for the type you like and get rid of the plants that are obviously not adapted to your growing system, the varieties will slowly peter out through genetic drift.

That petering out is just what has happened to OPs in general, because the seed industry followed the hybrid money instead. It's also likely why, at harvest time, some of my recent garden failures (and perhaps yours) bore no resemblance to their catalog photos or descriptions.

Heirloom Misconceptions

The word "heirloom" doesn't tell you much, nor does it guarantee quality or suc-



Breeders Eric Budzynski and John Navazio tour an overwintering-chicory breeding project at the 2014 Organic Seed Growers Conference in Oregon.

cess. An heirloom is a type of open-pollinated variety that, by various definitions, is either at least 50 years old, or 100, or has survived outside the commercial seed market for more than 50 years by being passed down within one family or community. Despite heirlooms' appeal and popularity, the term's meaning is fuzzy.

Heirlooms, however, are critical to our cultural, agricultural and botanical heritage, and are loaded with precious genetic diversity. Seed Savers Exchange, which has committed 40 years to preserving and reviving heirloom varieties, confirms that a strain of an heirloom (or any OP) that hasn't been cared for becomes a glimmer of its genetic origins.

"Heirloom" seems to strike a chord with farmers-market shoppers and seed buyers, so, like "natural" in the food world, the term is at risk of being used as greenwashing if what's inside the packet is seed that hasn't been rigorously maintained. I'm suspicious if a catalog offers me no insight on its seeds beyond labeling them "heirloom," which, on its own, isn't enough information to know whether I'm getting highquality seeds adapted to my garden.

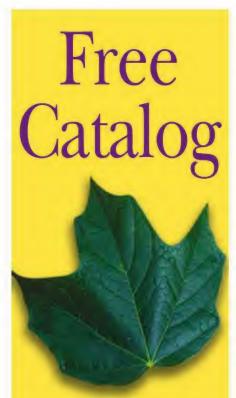
Heirlooms aren't the only OP seeds (or even necessarily the most exciting ones). All heirlooms are open-pollinated, but not all open-pollinated varieties are heirlooms. Many experts tell me that some of the most dynamic OPs of all are modern ones, or "heirlooms of tomorrow," as Ken Greene, co-founder of Hudson Valley Seed Library in New York, calls them, referring to treasures such as the Library's whopping-big, regionally adapted 'Upstate Oxheart' tomato, which was grown and selected in Dutchess County, N.Y.

I marvel at modern OPs from the ongoing 40-year legacy of breeder Alan Kapuler of Oregon, which are available in the Peace Seedlings catalog and elsewhere, such as his dramatic, purple-podded 'Sugar Magnolia' snap pea (pictured on Page 25). Same goes for vivid 'Merlot' lettuce, developed by Frank Morton of Oregon-based Wild Garden Seed, who, like Navazio and Kapuler, provides inspiration and mentoring to upcoming seed farmers. These varieties, along with Morton's red-splashed 'Flashy Butter Oak' lettuce and 'Flashback' calendulas, are the stunning heirlooms of tomorrow, which is exciting for future gardeners. Morton grows every seed he sells, both retail and wholesale (most of his business is with other catalogs and farmers).

I'm not surprised, then, that when I grow modern OP gems from the top organic breeders, I often have my best results. The farmer-breeders behind them are actively and intimately engaged with the seeds' genetics, evolving with the varieties in real time. Today, this is the exception in the seed world—not the rule.

The Hybrid Craze

Some regard "hybrid" as a bad word; others say this type of seed is a magic wand. But maybe it's neither. I grow some hybrids among the OPs in my garden. Some growers eschew them because the erosion of biodiversity in agriculture can be traced to hybrids' industry dominance—and because they want to be seed-independent (meaning they don't want to buy seed each year). For some attributes, such as disease resistance in tomatoes, I have come to count on certain hybrids. Experts such as Colley and Navazio say OPs can offer many such traits, too, if breeders invest time and expertise in the plants'



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development. But, for many vegetables, we just aren't there yet. The industry has been so hybrid-centric, Navazio says, that some entire crops even suffer from "hybriditis," meaning more than 90 percent of the available varieties are hybrids. This is the case with broccoli, cabbage and carrots.

"Practically nobody's been taking care of the OPs' genetics since the seed companies invested in hybrids about 40 years ago," Navazio says. "The hybrids have had a half-century of the best and brightest breeders working on them." Frankly, that's where the money was. As

more gardeners and farmers understand the hybrid vs. OP trade-offs and switch to open-pollinated seeds, companies will invest more in such varieties, offering growers the power to save their own seeds of first-rate, organically bred varieties.

What About GMOs?

Despite much recent confusion, "hybrid" is not a synonym for "transgenic hybrid" (also called a "genetically modified organism," or GMO). Transgenic seed is produced in a biotech lab by a process that, unlike with OPs and hybrids, does not involve sexual reproduction. To create a GM variety, scientists transfer genes between organisms not closely enough related to otherwise reproduce.

Though many gardeners urgently ask me to help them identify catalogs that don't sell genetically modified seed, I don't worry about that the way I worry when food shopping, where GMOs are frontof-mind. That's because no home-garden seed catalog knowingly sells GM seed at this time. So far, it's only available in the commodity-crop realm, and to grow that agricultural seed (for crops such as alfalfa, canola, corn, cotton, soybeans, squash and sugar beets), a farmer must enter into a lease-like legal agreement - not unlike when you license a copy of computer software. Catalogs selling gardeners small packets are not in the licensing business. Yes, unwitting instances of genetic contamination may be in the garden-seed



Jim Myers at Oregon State University developed 'Indigo Rose,' an openpollinated tomato variety with increased antioxidants (released in 2012).

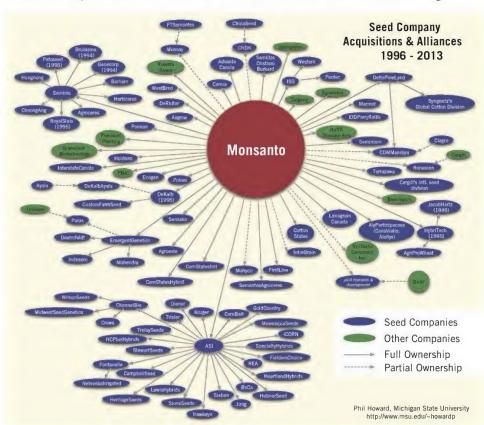
supply, though smart companies now test vulnerable crops, such as sweet corn, and proudly tell customers so. Many catalogs make "non-GMO" claims loudly, specifically to address this rise in customer concern. That's fine, as long as it's not the only variable the catalog tells me. Similarly to when I see only an "heirloom" claim, I'm suspicious if "non-GMO" is all I'm offered. Look for catalogs that give you more details.

Regional Breeding

The more I learn, the more I'm inclined to take my locavorism to the seed level. It's not an original idea. "In the 12,000 or so years of agricultural history, farmers have always had, until very recently, an intimate relationship with the seeds they grow," Navazio says. "They have been stewards of the seed and, in fact, shaped the seed—and farming practices and communities have co-evolved with the seed-crop

varieties they grew."

Even if you don't choose to save your own seed, tracking down seed bred for your region will provide enhanced performance against local climate, pest and disease challenges. Doing so can even affect flavor, such as with tomatoes, says Tom Stearns, founder of Vermont-based High



Consolidation gone wild: Large companies, such as Monsanto (shown here), Dow, Syngenta and DuPont, have bought up dozens of smaller seed companies, especially in the commodity-crop sector.

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Circle #60; see card pg 81

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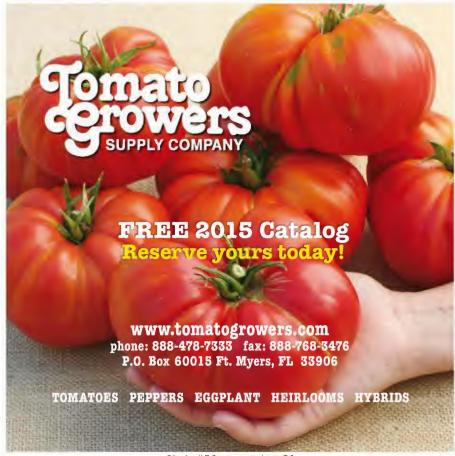






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Mowing Organic Seeds, which sells a mix of hybrids, heirlooms and modern OPs. "A tomato's final flavor is 60 percent genetics, 40 percent environment," Stearns says. "If it was bred and selected for the environment you're growing it in, then you can get to the pinnacle of that variety's taste. But if it's a Florida-produced variety, for instance, and you grow it in the Northeast, the marriage of that seed's genetics and your environment won't result in the realization of that crop's ultimate potential."

While choosing local makes sense, note that just because a company may be based in your region doesn't mean all of its seed offerings are bred and grown in local soils. Perhaps the company contracts with large seed wholesalers elsewhere. Another good reason to ask companies, "Where does your seed really come from?"

Organic Seed

Seed farming can be a dirty business. Raising a plant through its entire life cycle to its reproductive stage means it's in the ground longer—subject to more months of pest and disease pressures—than the same crop raised for food. Plus, regulations for the application of agricultural

chemicals may be less strict for seed farming than for market growing of the same crop. Unless you buy only organic seed, you may be unknowingly contributing to chemical pollution on the seed farm. Organic seed is the best match you can make for your chemical-free backyard. Using conventionally grown seed is what Stearns calls a "dull tool" for home gardeners who don't use chemicals, because this seed was bred and raised on pesticides and chemical fertilizers—adapted to a diet of them.

"The crop varieties that humans grow are influenced greatly by the environment," Navazio says. "If we grow our crops under high-input, synthetic systems, they'll adapt to that. In organics, you must reintroduce nature, and to do that in an agricultural system, you have to adapt the crops to perform under this whole new paradigm of not getting more than enough fertilizer, and not receiving protection from every single pathogen, disease agent or insect." We need to start holding



While heirlooms' beauty is alluring, modern OPs bred for your region may be genetically superior.

seed sellers accountable, and asking them to specify whether chemicals were used in the breeding and growing of each variety they offer. This would require extra work for sellers, so, aside from labeling certified organic seed, most companies don't do it. Your questions may prompt change.

An Industry Snapshot

So where did your seed come from, and is it a good match for your garden? First, remember that many home-garden seed

Farmer-breeders actively engaging with seed genetics to improve and maintain varieties has become the exception in the seed world — not the rule.

companies don't breed or even produce what they sell. Gardeners' needs are very different from those of industrial farmers, but because garden seed is only a tiny share of the world seed market, research and breeding have focused on the more lucrative segment for decades. A brief look at the seed industry is troubling.

Fewer than 10 transnational corporations—giant companies that also produce pharmaceuticals and chemicals—currently own about 80 percent of the world's

commercial seed. Much of this seed is for field crops, such as corn and soy, though these companies are increasingly investing in fruit and vegetable seeds. The next tier of the seed industry includes giant distributors that grow no seed but sell the big guys' wares (sometimes to homegarden catalogs). Then come brokers who specialize in cheap OP seed sold in some garden catalogs-non-organic seed that may be short on good, selective maintenance. These mostly cost-focused compa-

> nies contract to have OPs grown, but they may lack commitment and the pride of ownership.

Here's the bright light in this dim picture: Nurtured in part by the Organic Seed Alliance, more smallscale breeders are developing and stewarding regionally suited crop varieties. This movement began about 40 years ago, when seedsmen such as Alan Kapuler began his open-source breeding in the early 1970s. About that same time, Rob Johnston of Johnny's Selected

Seeds in Maine—now a large, employeeowned operation that sells conventional and organic seed-shaped his company to identify the best-tasting and easiest-togrow varieties for regional gardeners. Frank Morton at Wild Garden Seed (who sells seed to Johnny's and others) has been at it for more than 20 years, and Tom Stearns at High Mowing for 18-both of them with an organic-only mission.

On their heels comes today's generation of seed stewards, some at companies with appropriately spirited names, such as Uprising Seeds and Adaptive Seeds in the Pacific Northwest. Other organizations have a business model quite divergent from the transnationals, including two in New York's Hudson Valley: Turtle Tree Seed is a nonprofit that staffs adults with disabilities. At Hudson Valley Seed Library, some customers choose to become members, and then return their own saved seed that will, in turn, be donated to worthy causes.

The companies I've named here (and in "Picking Your Packets," below) maintain solid genetic stock and either produce their seed or have close relationships with the farmers who do—people they're proud to name. Some even develop new varieties intended for organic farms and gardens right on the land they work, with no secrets about how. The result is exceptional seed that promises to be a better match for regional gardeners. **

Whether it's on her info-packed website (www.AWayToGarden.com) or her public-radio show, Margaret Roach's brand of "horticultural how-to and woowoo" fuses practical information and philosophical inspiration for organic gardeners and those curious about the natural world. She's been growing and writing about plants for 25-plus years.

Picking Your Packets: 6 Seed-Shopping Rules

- 1. Take your time. Ask questions to make a good match geographically, culturally and practically. You want regionally suitable seed that will like your conditions and methods and return your desired result.
- 2. Know your breeder. Research your seed companies, shopping as carefully for seed as you do for food. Are they seed farmers, at least in part, or simply sellers of seed bred elsewhere? Either can be fine—depending where "elsewhere" is. Read catalogs' fine print, such as that provided by Bountiful Gardens in Northern California and Fedco Seeds in Maine.

What? A catalog doesn't say? Sellers of a live, adaptive product—whose genetics are the product—should want to tell you how much care was taken to deliver it true to type, fresh and vigorous, and want to assure you that it was produced without chemicals the way you'll grow it at home. Insist, or shop elsewhere.

3. Focus on your region. If you find a strong, regionally bred choice, go with it—especially with long-season crops, such as tomatoes, peppers and squash. I'm blessed to have multiple organic seed farmers near me, including Turtle Tree Seed (a biodynamic company) and Hudson Valley Seed Library, both in New York, and High Mowing Organic Seeds in Vermont.

Organic growers in the Pacific Northwest reside in the seed-supply mecca, with Frank Morton at Wild Garden Seed and Alan Kapuler at Peace Seedlings, both in Oregon. A few young companies, such as Adaptive Seeds (with a trove of kale and winter squash genetics) and Siskiyou Seeds in Oregon, and Uprising Seeds in Washington (better beets and Northern-bred tomatoes), enrich the regional palette.

If you face arid conditions, see what genetics Native Seeds/SEARCH in Tucson has in its vault. In the foothills of Northern California, Sierra Seeds offers organic, regionally adapted varieties.

Southern Exposure Seed Exchange in Virginia has been focused for 30-plus years on the Mid-Atlantic region. Sow True Seed in Asheville, N.C., is a newer Southeast-centric catalog that likewise emphasizes regional seed selections.

In the Midwest, check in first with Seed Savers Exchange or Sand Hill Preservation Center, both in Iowa. Glenn and Linda Drowns of Sand Hill have

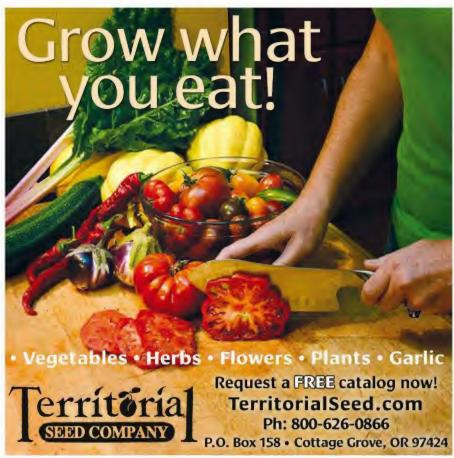
been preservationists for decades, and Glenn's collections of squash and corn are unrivaled.

- 4. Consider specialty sources. If you can't find a regionally bred source, seek out a specialist—the breeder obsessed with lettuce genetics or disease-resistant tomatoes, for example. I'd also go to a specialist for a signature crop of an area I don't reside in, such as asking Southern Exposure to recommend an okra or a crowder pea. I wouldn't count on it as my main crop, but if it does well and is openpollinated, I'd save that seed and begin adapting it to my garden for more successful future plantings and harvests.
- 5. Eschew harmful chemicals. This one's simple. Where organic or chemical-free is offered, buy it. In most cases, you'll get what you pay for. Vote with your dollars for a better seed supply that's welladapted to organic growing methods. Create supply with demand.
- 6. Be forgiving. What if a packet is a flop? "Don't base your impression of a seed supplier on one year," says Micaela Colley of Organic Seed Alliance. "Seed is not an easy product to maintain quality-wise; it's a moving target." Forgive a one-time glitch, and always remember that seeds aren't widgets—they're alive.



There's a lot more to those seed packets and colorful catalog descriptions than meets the eye. Shop thoughtfully, read the fine print, and ask questions of your seed companies.





Circle #54; see card pg 81

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ELECTRIC CAR QUESTIONS— ANSWERED!

How far is their range? How much money would you save on gas? We tackle these and more of your questions about electric cars. Buckle up!

By John Rockhold

o longer hypothetical vehicles of the future, electric cars are shaking up the market much like hybrids did more than a decade ago. Nine models of rechargeable vehicles—allelectric and plug-in hybrid electric cars—are now widely available in the United States, and nearly every major automaker has at least one electric vehicle (EV) in the works. Here, we answer some of your most frequently asked electric car questions to help you better evaluate whether one of these electrifying rides may be right for you.

1 How much does it cost to drive an electric car?

Electric cars' efficiency is measured in MPGe, which stands for "miles per gallon equivalent" and is the metric that federal agencies use to compare these vehicles' energy consumption with that of gasoline-powered vehicles. (The chart on Page 36 lists the MPGe for six top electric vehicles.) As impressive as 114 MPGe—the rating for the all-electric 2015 Nissan Leaf—may sound, perhaps a more practical way to gauge the money-saving merits of an EV is to look at the cost to drive one.



Consider the cost to fuel 50 miles of driving: With a 30-mpg gasoline car, assuming \$3.50 per gallon of gasoline, the expense for a 50-mile trip would be \$5.83. Assuming a rate of 12 cents per kilowatthour (kwh), the cost to drive the all-electric Leaf 50 miles would be \$1.80.

Mile by mile, you'd pay about twothirds less to charge an electric car versus what you'd pay to fuel a gasoline car. Run our Leaf example against the numbers for

a 50-mpg hybrid car, and you'd still arrive at about 50 percent savings per mile. With that in mind, a savvy electric car salesperson could tell you, "The more you have to drive, the more you'll save."

2 How much does it cost to buy or lease an electric car?

While electric cars cost significantly less to drive than gas cars do, EVs currently cost significantly more to buy. The two least expensive of the most widely available all-electric options are the Mitsubishi i-MiEV (starting at about \$23,000) and the Smart For Two Electric Drive (about \$25,000). In the plug-in hybrid arena, the two least expensive of the most widely available models are the Toyota Prius Plug-in (about \$30,000) and the Ford C-MAX Energi (about \$33,000).

Those prices do not factor in discounts from federal tax credits, which range from \$2,500 to \$7,500, depending on the capacity of the car's battery pack. Several states offer additional tax credits, cash rebates and other incentives for electric car owners. Learn more at the U.S. Department of Energy's Tax Incentives Information

Charge in minutes, free: Tesla Superchargers, strategically located across North America, replenish about half the battery of the Model S in as little as 20 minutes. Shown here: a Supercharger station in Columbus, Texas.

The 75-to-90-mile range of current all-electric cars can accommodate the daily driving needs of the vast majority of drivers.

Center at http://goo.gl/Th3mu2, and on the PluginCars.com incentives roundup page at http://goo.gl/RwenkP.

Some electric cars are available for lease, including the Chevrolet Volt, Ford Focus Electric and Nissan Leaf. Depending on the model as well as on current rates and incentives from the automaker, the monthly lease payment for an electric car can range from about \$100 to \$300.

Mother Earth News Publisher Bryan

Welch leases a Chevy Volt for his daily 60-mile commute. Most of those miles are powered by renewable energy, thanks to solar panels at Welch's homestead. His monthly savings in reduced fuel costs nearly cover his monthly lease payment for the Volt.

Just as with gas cars, the cost to drive and the cost to buy or lease an electric car do not represent all costs of ownership. Other considerations include taxes, interest, insurance, depreciation, and the cost to have a 240-volt outlet installed to allow for faster charging. A handy tool to assess all of this for any car is Edmunds' True Cost to Own website (www.Edmunds.com/tco.html). One particular perk of electric car ownership is that you can expect to save thousands of dollars over the vehicle's lifetime by virtue of its lower maintenance costs. Imagine: no oil changes or any other maintenance associated with engines or exhaust systems.

What makes EVs more efficient?

Often overlooked amid the glitz of electric cars' superb MPGe numbers is the inherent reason for their efficiency: Electric cars do a far better job converting stored energy into movement.

In gasoline vehicles, only about 20 percent of the energy within the gasoline actually gets used to propel the car. The remaining 80 percent is lost, mostly during the engine's combustion process. In contrast, about 75 percent of the power stored in an electric vehicle's battery pack goes to the motor to make the car move. So, even if that electricity comes from a coal-burning power plant, an electric car will still consume less fossil fuel per mile (and cause less air pollution) than a gas-powered vehicle would.

What's the range of an EV, and how long does it take one to recharge?

Range is probably the most significant question on the mind of anyone considering an EV—perhaps even more so than price. The all-electric models currently on the market have different range estimates, but each falls within approximately 75 to 90 miles. The distinct exception is the Tesla Model S, which, thanks to its more robust battery system, achieves a range of about 208 or 265 miles (for the 60-kwh or 85-kwh battery options, respectively).

Weather, driving conditions and your driving style will all influence how far you can drive an electric car on a full charge. If you live in a region that experiences serious summers or wicked winters, you should evaluate the heating and cooling nuances for both the cabin and the battery pack of any potential EV purchase. Extreme temperatures can notably diminish an electric car's range—by 25 to 50 percent. While automakers continue to make



This home solar array in Bellingham, Wash., produces 75 percent of the household's electricity, including enough to recharge its owners' 2013 Nissan Leafs.

improvements on this issue, it's one of a number of considerations you can get valuable perspective on by consulting EV drivers who live in your area or in a similar climate. The chart below lists online forums where you can read about other drivers' firsthand experiences and ask the community any questions.

The 75-to-90-mile range of currently available all-electric cars can accommodate the daily driving needs of the vast majority of drivers. Rapid-charging stations, paid and free, for all EVs are quickly increasing in number. Such expansion will be critical to making electric cars a feasible means of transportation for more people, especially for trips upward of 90 miles.

Plug-in hybrids eliminate any "range anxiety," because after their battery power has been depleted, these cars keep running via their gasoline engines (meaning you'll still need to fuel up at a gas station). The Chevy Volt (about 380 miles of total range) and the Toyota Prius Plug-in (about 540 miles of total range) are the banner examples of plug-in hybrids.

Recharge time varies more than range among electric car models. In general, it takes an overnight stretch or more (10 to 20 hours) to fully recharge via a standard 110-volt outlet. You can cut that time by half or more with a 240-volt outlet.

5 What's the battery situation?

All current models of electric cars have roughly the same warranty on their battery packs: eight or 10 years/100,000 miles. In the highly unlikely event that your electric vehicle's battery pack goes kaput before that, you'll be covered.

How much would a battery fix or replacement cost after the warranty expires? That's uncertain territory at this point. Nissan recently priced a new battery pack for the Leaf at \$5,499 (not including taxes and installation fees). The takeaway points here are that (a) costs for advanced lithium-ion battery packs will continue to decline, and (b) drivers shouldn't worry that these battery packs will die before 100,000 miles.

6 Standout Electric Cars

Model	Туре	Price	MPGe	Annual Fuel Cost	Cost to Drive 25 Miles	Electric Range	Total Range	Owners Forum
Nissan Leaf	All-electric	\$28,980	114	\$550	\$0.90	84 miles	84 miles	www.MyNissanLeaf.com
Smart ForTwo Electric Drive	All-electric	\$25,000	107	\$600	\$0.96	68 miles	68 miles	www.MySmartElectric Drive.com/forum
Tesla Model S	All-electric (85-kwh)	\$79,900	89	\$700	\$1.14	265 miles	265 miles	www.TeslaMotorsClub.com
Chevrolet Volt	PHEV	\$34,995	98	\$950	\$1.05 (electric); \$2.63 (gas)	38 miles	380 miles	www.GM-Volt.com/forum
Ford Fusion Energi	PHEV	\$34,700	88	\$1,050	\$1.37 (electric); \$2.33 (gas)	19 miles	550 miles	www.MyFusionEnergi.com /forum
Toyota Prius Plug-in	PHEV	\$29,990	95	\$950	\$1.45 (electric); \$1.77 (gas)	6 miles	540 miles	www.PriusChat.com

PHEV = plug-in hybrid electric vehicle; Price = manufacturer's suggested retail price (does not include various taxes and fees); MPGe = miles per gallon equivalent; Annual fuel cost = estimate based on 15,000 miles driven annually, 45 percent highway driving, 55 percent city, \$3.54 for regular gasoline, \$3.89 for premium gasoline (required for the Volt), \$0.12 per kilowatt-hour for electricity; Electric range = range on battery power alone. All data for 2014 models.



6 Are EVs really green and safe?

Several studies have shown that EVs, even when recharged with conventional fossil fuel energy, emit less pollution than gas-only vehicles do, and thus help slow climate change. For much more info, see "Why Electric Cars Are Cleaner" at http://goo.gl/kRLcx7.

Of course, the best scenario would be to recharge your electric car from renewable energy sources, which would also protect you from rising gas prices or gas shortages. Whether powered via solar panels on your roof or via a wind farm tapped by your utility, all-electric vehicles that operate on renewable energy are a truly zero-emissions means of transportation. This speaks to a major long-term advantage of electric cars: They support the essential shift away from fossil fuels to renewables.

A tangential concern is whether our power grid can handle the energy demands of electric cars, especially if sales skyrocket. "Study after study shows that electric cars won't tax the grid if they charge primarily at night," says Jim Motavalli, author of *High Voltage: The Fast Track to Plug In the Auto Industry*.



With its battery fully charged, the Toyota Prius Plug-in (above) delivers up to 95 MPGe. The 107-MPGe Smart ForTwo Electric Drive (left) carries a base price of \$25,000, making it one of the more affordable electric cars on the U.S. market.

When it comes to safety, all-electric and plug-in hybrid cars have performed as well as if not better than their gasoline-only counterparts in crash and rollover tests conducted by the National Highway Traffic Safety Administration and the Insurance Institute for Highway Safety. For an in-depth look at a number of aspects of these vehicles' safety, check out our article "The Truth About Electric Car Safety" at http://goo.gl/YntNKA.

What's it like to drive an EV?

Perhaps the least known "fact" about electric cars is how fun and fulfilling they are to drive and own. They float down the road with such rocket-like acceleration (they have no gears to cycle through) that you might feel like you're piloting a spaceship. Speaking of spaceships, "What it's like to own a Tesla Model S: A cartoonist's review of his magical space car" is an educational, entertaining and slightly profane comic about the Tesla Model S that's a worthwhile read. Find it at http://goo.gl/Vz5TP9. As remarkable as the Model S is, the most promising output from Tesla is still to come: The automaker has set its expectations for its Model 3 at about 200 miles of range for about \$35,000. It will go on sale in 2017.





Expert Tips for Growing EARLY TOMATOES

Add a month to your fresh-tomato season with these proven techniques.

By Barbara Pleasant

n almost any climate, the best time to start most tomato seeds is six to eight weeks before your average last spring frost. (You can find your frost dates at http://goo.gl/cUajuC.) This tried-andtrue schedule provides juicy tomatoes by high summer, but many gardeners and cooks become impatient for sun-ripened tomatoes earlier. You can satisfy this premature tomato craving by learning how to grow extra-early tomatoes. By choosing varieties that mature quickly, starting those seeds a month ahead of your typical schedule—10 to 12 weeks before your last spring frost—and then giving the plants special care, you'll harvest tomatoes at the beginning of summer, when main-crop tomatoes are only beginning to bloom.

Most tomato varieties thrive in warm soils, so plan to grow your earliest to-

matoes in containers for best results. In spring, when the plants start spending time outdoors, their roots will stay warmer in containers than they would if planted in the ground. You won't need huge vessels because the stress from slightly cramped roots will push quick-maturing tomatoes to produce flowers and fruits in less time than usual. A 3-gallon bucket or a 12-inch-diameter pot or hanging basket will be about right for each plant. Ideally, each container should have a lip or handle for easy lifting.

Extra-Early Varieties

In the garden, indeterminate varieties that produce for many weeks are usually best, but certain compact, determinate varieties will provide you with more tomatoes sooner. Choose carefully—some early determinate varieties have much better flavor than others! The following

open-pollinated, determinate tomato varieties have well-deserved reputations for delivering rich, main-season tomato flavor in record time:

'Sophie's Choice' is a cool-tolerant heirloom tomato from Edmonton, Alberta, that produces round, red slicers on compact, 24-inch plants. Fruit size varies from egg-sized to baseball proportions, and the flavor of 'Sophie's Choice' is mildly sweet with a pleasing balance of tangy aromatics.

'Glacier,' a smaller, red slicer, comes from Sweden and has potato-leaf foliage and a bushy growth habit. The bulky 'Glacier' tomato plant grows to 30 inches tall, and needs staking to support its concentrated crop.

'Whippersnapper' is a pink-red cherry tomato with a quirky growth habit. Short side branches spread out horizontally, making the 'Whippersnapper'

tomato ideal for containers or hanging baskets. In Canada, this variety has gained a following after winning a race for first ripe tomato of the season.

Do not pinch or prune these or other quick-maturing determinate tomato varieties, because all stem tips will bear flowers and fruits, and then the plants will decline. You can try growing exceptionally early indeterminate varieties, such as 'Stupice' (small slicer) or 'Bloody Butcher' (large cherry), but their sprawling growth habits make them difficult to handle in containers. Growing these types outdoors in plastic-wrapped cages is a better bet.

The Right Light

Tomatoes are full-sun plants, so indoor starts need supplemental light to grow fast and strong. Fluorescent lights are cheap and easy to rig up, but they're not all alike. To learn about the newest generation of energy-efficient grow lights, see "Best Grow Lights for Starting Seeds Indoors" on Page 75.

Keep your lights on for about 14 to 18 hours per day. You can use a timer, or operate the light manually. Pause to blow on the plants twice a day—these little puffs of wind will enhance the sturdiness of the growing stems.

Planting, Care and Feeding

Use a fresh bag of seed-starting mix to get your seeds going in small containers, such as bedding plant cell packs or 4-ounce paper cups. After the plants each produce one true leaf and you can see white roots in the drainage holes, gently repot the plants into 4-inch containers. After three weeks or so, when the plants' roots have filled the 4-inch pots, shift the plants into their permanent containers - 12-inch-diameter pots or baskets, 3-gallon black nursery liners, or plastic buckets with plenty of drainage holes.



Tomato seedlings need plenty of light to grow well.



Next season, see fruiting action weeks ahead of schedule!



'Sophie's Choice' (above) and 'Whippersnapper' (opposite) are great-tasting, quick-maturing varieties.

You can start with any good commercial potting soil for growing early tomato varieties, and then mix in up to one-third part compost. Watch plants to make sure they're growing steadily, and feed them with a diluted, liquid organic

fertilizer if new growth stalls. Be ready to step up feeding when the weather gets warm enough to move the plants outdoors. Dry organic fertilizers are easy to sprinkle over the soil's surface before thorough waterings. With container tomatoes, you'll need to be extra-diligent about watering; strive to keep the soil lightly moist at all times.

In Transition

On sunny spring days with temperatures above 55 degrees Fahrenheit, move the plants to a spot outdoors that gets sun, but little or no wind. The container tomatoes will probably be too large for a cold frame, but you can make a high-profile mini-greenhouse in minutes by turning a small table upside down and attaching sheet plastic to the legs to form an enclosure. If needed, you can shroud the setup with row cover for additional insulation. Bring the plants inside at night and during periods of cold, damp weather, keeping them in your brightest window.

As soon as your early tomatoes produce flowers, enhance pollination by blowing gently on flower clusters or touching the back of a vibrating toothbrush to blossombearing stems. You'll want to mimic the buzzing action of pollinating bees, which, according to the Xerces Society, can increase fruit set by approximately 45 percent.

If you choose quick-maturing tomato varieties and start growing them in containers 10 to 12 weeks before your last spring frost, then you'll enjoy delicious homegrown harvests weeks before your neighbors even pick their first fruits. **

CHECK OUT OUR BRAND NEW *tomato chooser* app!

Tomato lovers, get ready to have some fun! We're excited to announce our new Tomato Chooser iPhone app, which allows you to browse and sort through 333 tomato varieties. You can filter by color, size, time to maturity, disease resistance and more—making your discovery of the perfect varieties for your garden a snap. You can even see which varieties have exceptional flavor, according to tomato experts. Click on any tomato you're interested in to see its profile and photo. You're bound to discover new favorites and become totally tomato-obsessed after spending time with this app! Download the app for only \$1.99 at www.MotherEarthNews.com/Tomato-Chooser.



BACK TO BASICS Make Your Own Shampoo, Deodorant and Toothpaste

Whip up these three recipes to save money and avoid the potentially dangerous ingredients hidden in many commercial products.

By Hannah Kincaid

ven all the concern about the many harmful chemicals present in our environment, you would think that the personal care products we use every day—items such as deodorant, shampoo and toothpaste—would be regulated to confirm they're safe. Manufacturers, however, aren't required to test these common toiletries for safety. In fact, manufacturers don't even have to list each product's ingredients on the label. For example, the cocktail of compounds found within a fragrance is considered a trade secret, which means no ingredient has to be listed individually. Testing has revealed an average of 14 hidden, unlisted compounds per fragrance formulation.

The nonprofit Environmental Working Group (EWG) has been covering this issue for more than a decade, and the organization explains that the Food and Drug Administration (FDA) has authorized the personal care products industry to police itself through the industry's own Cosmetics Ingredient Review panel. But such voluntary self-regulation rarely works well, and the EWG reports that in the panel's more-than-30-year history, it has declared only 11 ingredients or chemical groups to be unsafe. Plus, the panel's recommendations about banning certain ingredients are not binding.

Here's how the EWG explains the potential dangers of some toiletries:

"People are exposed to cosmetics ingredients in many ways: breathing in sprays and powders, swallowing chemicals on the lips or hands, or absorbing them through the skin. Biomonitoring studies have found that cosmetics ingredients, such as phthalate plasticizers, paraben preservatives, the pesticide triclosan, synthetic musks and sunscreen ingredients, are common pollutants in the bodies of men, women and children.

"Many of these chemicals are potential hormone disruptors," the report con-

tinues. "Cosmetics frequently contain enhancers that allow ingredients to penetrate deeper into the skin. Studies have found that people exposed to common fragrance and sunscreen ingredients have health problems, including increased risk of sperm damage, feminization of the male reproductive system, and low birth weight in girls."

Most marketing claims on personal care products are unregulated, and companies are rarely, if ever, required to back them up. The FDA says descriptions such as "hypoallergenic" and "natural" can mean anything or nothing at all. Head



Minty-Fresh Peppermint Toothpaste

The cool, clean taste of peppermint is the quintessential toothpaste flavor. In cosmetics and bath products, mint is used as a skin soother, deodorizer and cleanser. For more recipes by Janice Cox, order her book Natural Beauty at Home on Page 63. Yield: 2 ounces.

1 tbsp fresh peppermint leaves, chopped 1/4 cup water 1/2 tsp cornstarch 1/2 tsp sunflower oil

Place chopped mint leaves in a small saucepan and cover with water. Bring mixture to a boil. Remove pan from heat and let cool 15 to 20 minutes. In a separate bowl, stir cornstarch and oil until smooth. Strain the mint out of the water, and then add the cornstarch mixture to the pan. Stir well. Return the pan to the stovetop and apply medium heat. As soon as the mixture reaches a boil, turn off the heat and allow it to cool completely. Stir well, and place finished toothpaste in a clean container.

—Janice Cox



on over to www.FDA.gov/Cosmetics for additional information.

Avoid harmful ingredients and take a stand against labeling confusion in personal care products—and save money in the process—by making your own toiletries with the recipes shown here.

Skin Deep

If you want to research your favorite commercial products, the EWG's website features the Skin Deep Database (at www.EWG.org/SkinDeep), which includes information and safety ratings for more than 69,000 body care products, including shampoo, deodorant, toothpaste, makeup and more. Take this wealth of knowledge on the go by downloading the EWG's free Skin Deep app, which lets you scan the barcodes of cosmetics and bath products for an instant safety rating based on ingredients and environmental impact.

Homemade Deodorant Recipe

Making batches of homemade deodorant is simple and cost-effective. The Mother Earth News editors have tested this recipe, and they report that it's definitely not the pits. You can use either arrowroot flour or cornstarch as the thickening agent, but arrowroot flour is less abrasive. Some people report experiencing irritated skin after prolonged, topical applications of baking soda. For a baking-soda-free deodorant recipe, go to http://goo.gl/g3SXTB.

Because of coconut oil's low melting point, store your finished homemade deodorant in a glass or metal container kept in a cool location to prevent it from oozing liquid oil. Yield: 8 ounces.

1/2 cup baking soda 1/2 cup arrowroot flour or cornstarch 1/2 cup coconut oil, melted 20 drops essential oil of your choice Container for deodorant, sterilized and dried

Mix baking soda and arrowroot flour or cornstarch in a small bowl. Slowly add melted coconut oil, stirring until your mixture becomes a thick paste, about the consistency of glue. Add essential oil of your choice and mix thoroughly. Pour deodorant paste into your sterilized container, and place in fridge for 1 hour until it sets up. Store homemade deodorant in a cool, dry location.

-Old School, www.TheOldSchool.com

Shimmer and Shine: Basic Shampoo

This tress-cleansing concoction will seem thinner than most store-bought shampoos, but the effectiveness will be equivalent. Yield: 4 ounces.

1/4 cup water 1/4 cup liquid castile soap, such as Dr. Bronner's 1/2 tsp light vegetable oil (omit if you have oily hair)

Mix all ingredients in a small bowl. Pour the shampoo into a clean squeeze bottle or empty shampoo bottle. Apply to wet hair. If enhanced with egg, be sure to rinse with cool water.

Shampoo Enhancers

For dry hair, mix 1 tablespoon of honey with 1 tablespoon of Basic Shampoo. For oily hair, mix 2 tablespoons of fresh lemon juice with 1 cup of Basic Shampoo. For normal hair, mix 1 raw egg with 1 tablespoon of Basic Shampoo.

-Janice Cox



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Agave Eggnog

Ingredients

- 4 cups whole milk
- 1 teaspoon vanilla extract
- 2 cinnamon sticks
- 4 whole cloves
- 10 large egg yolks
- 3/4 cup Domino® or C&H® Organic Blue Agave Syrup
- 1/4 teaspoon salt
- 1 cup half-and-half
- 2 teaspoons vanilla extract
- 1/2 teaspoon ground nutmeg
- Agave Whipped Cream

Instructions

In a medium saucepan combine first 4 ingredients. Cook mixture over low heat 30 to 40 minutes until it reaches a low boil, stirring occasionally. Remove from heat; strain to remove cinnamon sticks and cloves.

In a large stainless steel bowl, whisk egg yolks, agave nectar and salt until frothy. Slowly pour hot milk mixture into bowl, whisking constantly

Pour mixture into saucepan, return to stove and cook over low heat, whisking constantly until it reaches 160°F. Continue cooking 1-2 minutes until it thickens slightly. Stir in half-and-half and additional vanilla extract.

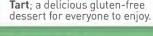
Remove from heat. Cool in saucepan for one hour. Transfer into a pitcher or airtight container. Place uncovered in refrigerator 1 hour. Cover and chill overnight. Before serving, garnish each glass with a pinch of nutmeg and Agave Whipped Cream, if desired.



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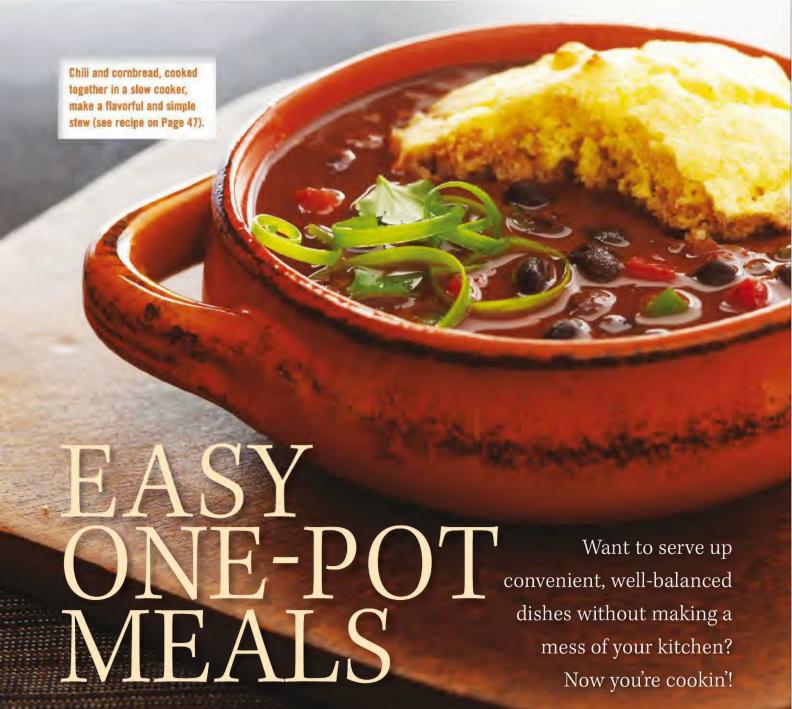


Find recipes at **chagave.com** or dominoagave.com









By Rebecca Martin

usy cooks have a taste for one-dish meals, ranking them among their favorite recipes. When cooked together, individual foods blend flavors to produce a delectable dish that's better than the sum of its parts. These dinners also minimize prep time in the kitchen and reduce the number of dirty pans to clean after everyone has pushed away from the table.

Each of these meals comes together in a single pot, although you may need smaller bowls for mixing. Plan ahead to use leftover mashed potatoes in the Shepherd's Pie (Page 48). Use a pressure cooker to shorten the cooking time of Short Ribs With Root Vegetables (Page 47).

Order the cookbooks from which most of these recipes were taken on Page 63. Find a year's worth of dishes at www.MotherEarthNews.com/ Easy-Meals.

Spicy Eggs With Kale

Kale is the nutritious green at the heart of this recipe, but you can also substitute spinach, Swiss chard or collard greens. Cook the eggs lightly, keeping the yolks slightly runny to create a rich, creamy sauce for the greens.
Lightly adapted from *One Pot of the Day* by Kate McMillan. *Yield: 4 servings; cook time: 15 minutes.*

2 thsp unsalted butter 4 green onions, chopped 2 cloves garlic, minced 2 bunches kale (or an equivalent amount of spinach, chard or collards), stems removed, roughly chopped 1 cup chicken or vegetable broth Salt and pepper, to taste Zest and juice of 1 lemon 4 eggs

Melt butter in a large skillet over medium-high heat. Add green onions and garlic. Cook, stirring, until fragrant, about 1 minute. Add half of the kale and sauté, stirring frequently until it begins to wilt, about 2 minutes. Stir in



Replace the flour, not your recipe.



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Circle #13; see card pg 81



Sautéed greens form an edible bed for lightly poached eggs when you rustle up Spicy Eggs With Kale.

the remaining kale and repeat. Add chicken broth, one-half teaspoon salt and one-quarter teaspoon pepper. Stir in lemon zest and juice. Simmer until the kale softens, about 6 minutes, stirring occasionally.

Using the back of a spoon, create 4 depressions in the bed of kale. Crack an egg into each depression. Reduce the heat to medium-low, and sprinkle the

eggs with salt and pepper. Cover the pan and cook until eggs are almost opaque, about 4 minutes. Turn off the heat and let the eggs rest, covered, until done to taste.

Roasted Winter Vegetables and Sausages

Roasting makes cool-season veggies appealing even to picky eaters. Segregate the beets dur-

ing cooking so they don't turn the other vegetables pink. If you prefer meatless meals, you can substitute a cup of cooked beans for the sausages. Recipe by Rebecca Martin. Yield: 4 servings; cook time: 30 minutes.

1 pound sweet potatoes, peeled and cut into 1/2-inch wedges 1/4 cup olive oil, divided 1 medium onion, peeled and

- sliced vertically into wedges 2 medium beets, peeled and cut into 1/2-inch wedges
- 4 bratwursts or Italian sausages, sweet or hot (about 1 pound)
- 1 pound small Brussels sprouts, trimmed, stems scored
- 1 tbsp fresh tarragon, chopped
- 1 tbsp fresh thyme, chopped
- 1 tsp fresh rosemary leaves, chopped

Salt and pepper, to taste Spicy brown mustard

Preheat oven to 400 degrees Fahrenheit. In a bowl, toss the sweet potatoes and onion wedges in half of the oil, and then spread them onto a heavy baking sheet, leaving one corner of the sheet empty. Toss beets in the same oil, and then drop them into the empty corner. Lightly salt and pepper the

Chicken and Dumplings

Nothing beats homemade, slow-cooked chicken and dumplings for a stick-to-your-ribs meal. This one-pot classic comes from the files of our sister publication Grit magazine, and is lightly adapted from its Comfort Food Cookbook. Yield: 6 servings; cook time: 2 hours.

11/2 cups all-purpose flour

1/4 tsp baking powder

Pinch salt

1 tbsp lard or butter

1/2 cup water

1 whole chicken, cut into pieces (about 4 pounds)

1 tbsp seasoning salt

31/2 quarts water

1/2 small onion, finely chopped

1 stalk celery, finely chopped

1 carrot, finely chopped

1/4 cup butter

Salt and pepper, to taste

1 tsp poultry seasoning

In a large bowl, sift flour, baking powder and salt. Cut in the lard until mixture resembles coarse crumbs. Stir in water until mixture forms a ball. Wrap the dough ball tightly and refrigerate for at least 2 hours or overnight.

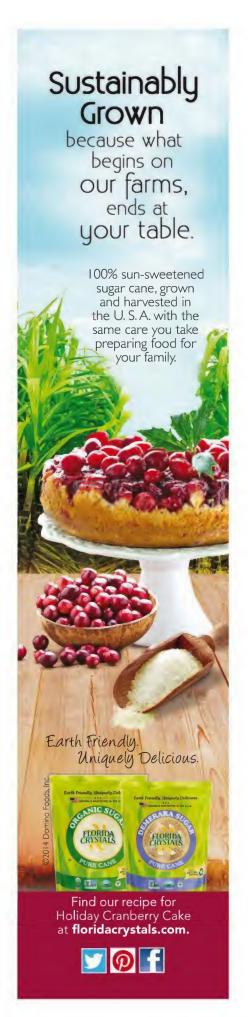
Remove skin from chicken breasts, thighs and back; leave skin on legs and wings. Season chicken pieces with seasoning salt and place

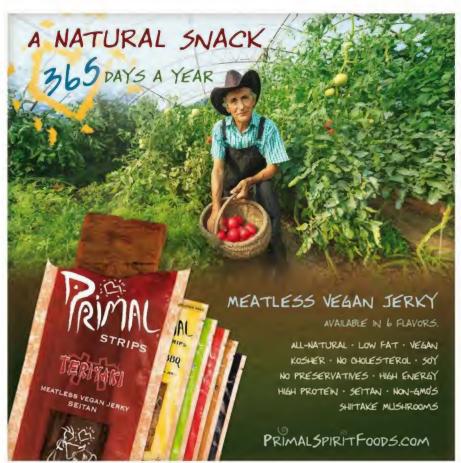


Tender chunks of chicken complement the hearty dumplings in this dish.

in a large stockpot. Add water, onion, celery, carrot and butter. Bring to a boil; reduce heat to simmer. Cook for about 1½ hours, or until meat falls off the bone. Remove chicken, let cool slightly, then strip the meat from the bones. Return chicken meat to the pot.

Remove dough ball from refrigerator. Pull off pieces of dough and roll into rough balls about 1 inch in diameter. Drop into the simmering broth for about 15 minutes, or until dumplings are cooked through. Add more water if necessary. Season broth with salt, pepper and poultry seasoning while dumplings are cooking.





Circle #49; see card pg 81





Sweet potatoes, beets and Brussels sprouts mix it up in Roasted Winter Vegetables and Sausages.

vegetables. Space the sausages around the sheet, avoiding the beets. Lay a piece of aluminum foil loosely over the pan and slide it into the oven.

Set the timer for 15 minutes, and trim the Brussels sprouts

while you wait. When the timer sounds, pull the sheet from the oven. Flip the vegetables and sausages with tongs or a spatula. Place sprouts in the spaces between the sausages and vegetables, again avoiding

the beets, and re-cover the sheet with the foil. Return the pan to the oven for 15 more minutes. Remove the pan and drizzle everything with the remaining oil. Sprinkle with fresh herbs and serve with spicy mustard.

Chili With Cornbread

Chili is a hearty one-pot meal on its own, but this slow cooker recipe offers a bonus-cornbread made inside the same vessel. You can also easily adjust this recipe to make pressure-cooker chili: Spoon the cornbread batter into a heat-proof dish, cover the dish with aluminum foil, and lower it into the cooker using a foil sling (find easy instructions online at http://goo.gl/YQnmRt). Cook at high pressure for 30 minutes, followed by natural release. For a different chili flavor, try substituting a 12-ounce bottle of dark beer for 1 cup of the water, or

Short Ribs With Root Vegetables

After you drop the short ribs into the pot, you can leave the kitchen until this meal is ready to eat. Turn this into a pressurecooker recipe by simply cooking the ingredients on high pressure for 1 hour. Encourage diners to mash the cooked root vegetables to absorb the sauce. Lightly adapted from Simply Ming One-Pot Meals by Ming Tsai and Arthur Boehm. Yield: 4 servings; cook time: 3 to 4 hours.

11/2 cups all-purpose flour 1 tbsp chili powder 6 single-rib or 3 double-rib short ribs Kosher salt and freshly ground black pepper, to taste

- 3 tbsp grapeseed or canola oil
- 2 onions, cut in 1-inch dice
- 2 tbsp minced garlic
- 1 pound carrots, cut in 1-inch slices
- 6 celery stalks, split lengthwise and halved
- 1 medium celeriac (celery root), peeled and cut in 1-inch dice
- 1 large sweet potato, cut in 1-inch dice
- 1 large parsnip, cut in 1-inch dice
- 2 tbsp soy sauce

Combine the flour and chili powder on a large plate. Season the ribs with salt and pepper, and dredge them in

the flour mixture. Heat a stockpot or another tall, wide pot over medium heat on the stove. Add 2 tablespoons of the oil and swirl to coat the bottom of the pot. After the oil is hot, shake the excess flour mixture from the ribs, add them to the pot and cook them, turning once, until browned, about 8 minutes. Set the ribs aside.

Add the remaining oil to the pot, and swirl to coat the bottom. When the oil

is hot, add the onions and garlic, and sauté, stirring, about 3 minutes. Add carrots, celery, celeriac, sweet potato and parsnip. Season with salt and pepper. Add the ribs, soy sauce and enough water to almost cover the ingredients. Taste and adjust the seasoning, if necessary. Cover and cook over medium heat until a knife passes through the meat easily, about 3 hours. Transfer the ribs and vegetables to a large bowl and serve.



You can braise fall-off-the-bone ribs slowly on the stovetop or quickly in a pressure cooker.

adding 2 tablespoons of finely ground coffee with the spices. Lightly adapted from 50 Simple Soups for the Slow Cooker by Lynn Alley. Yield: 6 to 8 servings; cook time: 7 to 9 hours.

Chili

2 cups dry beans, preferably black beans

6 cups water

6 allspice berries

1 stick cinnamon

1 tsp cumin seed

1 tsp coriander seed

1/4 tsp aniseed

31/2 cups (28 ounces) crushed tomatoes, canned or frozen

1 medium onion, diced

3 cloves garlic, minced

1/4 cup red bell pepper, diced

1/4 cup green bell pepper, diced

1 tsp dried oregano 1 to 2 tbsp chili powder 1/4 cup cocoa powder

Cornbread

1 cup cornmeal 1 cup all-purpose flour 1/4 cup granulated sugar 1½ tsp baking powder 1/2 tsp baking soda 1/2 tsp salt 2 eggs 2 tbsp vegetable oil 1 cup buttermilk

Toppings (optional)

1 cup sour cream or yogurt 1/4 cup green onions, sliced 1/2 cup black olives, sliced 1/2 cup fresh cilantro, chopped 1/2 cup grated ched-

dar cheese

To make the chili: Rinse the beans thoroughly and place them and the water into a 7-quart slow cooker. Grind the allspice, cinnamon, cumin, coriander and aniseed with a spice mill or a mortar and pestle. Add the spices to the beans, along with the tomatoes, onion, garlic, bell peppers, oregano, and chili and cocoa powders. Cover and cook on low until the beans are tender (6 to 8 hours), and then turn the slow cooker to high and prepare the cornbread.

To make the cornbread: Pulse the cornmeal, flour, sugar, baking powder, baking soda and salt in a food processor until thoroughly mixed. Add

the eggs, vegetable oil and buttermilk, and pulse until the liquid ingredients are thoroughly mixed in with the dry. Drop large spoonfuls of the cornbread mixture onto the surface of the chili, and continue cooking on high with the lid slightly ajar for 1 hour, or until a toothpick inserted into the cornbread comes out clean. Serve with toppings.

Associate Editor Rebecca Martin fires up a pressure cooker (she owns two) for a one-pot supper nearly every week.

Shepherd's Pie

Shepherd's pie is traditionally a lamb dish, but you can substitute any cubed or ground meat for the lamb shoulder in this recipe. Lightly adapted from One Pot of the Day by Kate McMillan. Yield: 6 servings; cook time: 2 hours.

2 pounds boneless lamb shoulder, cut into 1-inch chunks

Salt and pepper, to taste

2 tbsp olive oil

5 tbsp unsalted butter

1 large yellow onion, chopped

3 carrots, chopped

3 celery ribs, chopped

2 small cloves garlic, minced

1/3 cup all-purpose flour

31/3 cups beef broth

2/3 cup dry white wine

2 tsp fresh rosemary, minced

1 cup peas, fresh or frozen and thawed

3 cups mashed potatoes, warmed

Preheat oven to 325 degrees Fahrenheit. Season the lamb with salt and pepper. In a 3-quart Dutch oven, heat the oil over medium-high heat on the stovetop. Working in a few batches, sear the lamb, turning chunks until browned on all sides, about 5 minutes. Transfer to a plate.

In the same pot, melt 4 tablespoons of the butter over medium heat. Add the onion, carrots, celery and garlic. Cover and cook, stirring occasionally, until the carrots are just tender, about 5



Enjoy yesterday's mashed potatoes as a topping on this Shepherd's Pie.

minutes. Uncover, sprinkle with the flour, and stir well. Gradually stir in the broth and wine. Add the rosemary. Bring to a boil over medium heat, stirring to scrape up any browned bits from the bottom of the pot. Return the lamb to the pot, cover and place in the oven. Cook for $1\frac{1}{2}$ hours, until the lamb is tender.

Remove from the oven and season with salt and pepper. Stir in the peas. Spread the mashed potatoes evenly on top of the lamb mixture. Cut the remaining 1 tablespoon of butter into bits and dot the potatoes. Bake uncovered, until the potatoes are lightly browned, about 20 minutes. Remove from the oven and let stand 5 minutes before serving.

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Circle #59; see card pg 81

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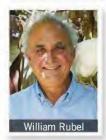














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MAKING HAY The Old-Fashioned Way

A little muscle and a few hand tools are all you need to put up tons of provender.

By Oscar H. Will III

ven in deep winter, if you've put up hay, you can inhale summer—the sweet perfume of a freshly mown hayfield—and think fondly of warmer days whenever you break into those grassy bundles of summer sunshine. Hay is a necessity for folks keeping cows, goats or sheep, but for many, the expense of collecting and maintaining all the power equipment used in the modern hay meadow would be too costly. Other options include buying hay, having a crew hay your place for a share of the harvest, or making what you need, slowly but surely, by hand.

As much as I enjoy the sounds and smells of diesel-powered equipment and modern, self-tying round balers, I'd always wondered whether I could pass muster with my ancestors by making sufficient hay to feed a small sheep flock throughout winter us-

ing only a scythe, primitive handmade hay rake, pitchfork and wagon. Plus, I figured I could get in some healthful physical activity if I put my scheme to the test.

Make the Cut

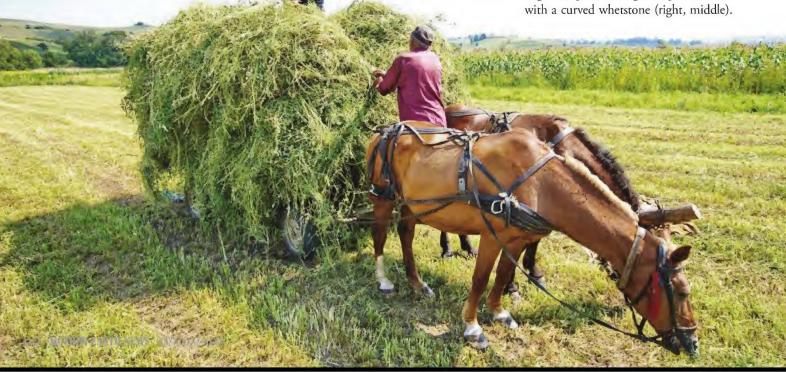
I already owned a lightweight Austrianstyle scythe with a snath (handle) custommade to my 6-foot-4-inch frame (about \$195 plus shipping from Scythe Supply; www.ScytheSupply.com). I also had a few old three-tine pitchforks, an antique wooden hay rake, and assorted small wagons cluttering up the barn, so I could spring into action within a day of hatching the plan.

At least a couple of different styles of scythes are out there. The first scythe I owned was beautiful and so lightweight I mistook it for a decorative replica of the real thing. I sold it for a few bucks to a "junk" collector. I later learned it was actually an

old Austrian-style scythe. At the time, I sought the heavy-snathed, heavy-bladed American-style scythe, which was, after all, heavy-duty. It was also plain heavy—and I was young, dumb and strong.

The American-style scythe is a formidable tool, constructed of hard, thick steel. Its snath usually features adjustable handles to help you get the right fit. The combination weighs about 7 pounds; you get plenty of momentum to motor through thick growth. There is nothing wrong with the American-style scythe, but after I tried an Austrian-style scythe, my old American began collecting cobwebs—and I eventually sold it to another junk dealer.

The Austrian scythe is finesse where the American-style is brute strength. The Austrian is made with softer, thinner steel, relying more on its shape for strength, and it weighs about half as much as an American scythe. To keep an Austrian scythe sharp, you must peen the cutting edge (see photo at right, top) and dress with a curved whetstone (right, middle).



Peening—which is working the cutting edge with a hammer against an anvil or jig-draws out an incredibly thin and sharp edge, and the whetstone will keep the edge true as a day in the field progresses.

Swinging any scythe effectively takes practice, but getting quality instruction will help even more. Take a look at the videos posted at www.ScytheSupply.com, and consider reading the pertinent sections of David Tresemer's The Scythe Book (see Page 63 to order).

Bring in the Sheaves

After you have your cutter in hand, procure a hay rake that is light and wide - old-fashioned wooden rakes are still available online and at some specialty stores. (Or, make your own! Find instructions at http://goo.gl/W4tpv4.)

In addition to a rake, a pitchfork designed for handling hay or straw is a must. These forks can be made entirely of wood, or, more likely these days, with fine steel tines (usually three or four) attached to a wooden handle. Longer handles are generally better than shorter handles, and you should sharpen tines that have dulled. A proper pitchfork will make loading hay onto your wagon and into the barn an easier task.

Finally, you'll need a cart or wagon to haul in your hay. I use an old 4-wheel garden wagon pulled by a utility vehicle or garden tractor, but you could use a pickup truck as well. Some folks rake their hay

onto a large, lightweight tarp and drag the load to where it's needed. You could also skip the hauling altogether and make small haystacks. If you choose this approach, consider covering the tops of the stacks with tarps to avoid losing hay to the wind.

Conducting the Orchestra

With tools in hand, you'll be ready to go to work as soon as your hay meadow is ready for harvest. For highest nutrient content, I try to make the first cutting just as the grasses are sending up their flower







stalks or the clover is beginning to flower. Contrary to ideal cutting conditions for mechanical haymaking, the best time for cutting with a scythe is as the sun is rising. Dew-dampened forage is more succulent and much easier to slice with a scythe than dry stalks will be later in the day.

My approach to moving is to cut as much as I can in about an hour and leave the swaths to dry for a day or two (our Kansas summers tend to be dry and sunny). If the humidity is high, I'll come back later in the day to fluff and turn the swaths

Peening draws out a thin edge on a scythe (top). A few licks with a whetstone throughout the day will keep the edge true (middle). Add a rake, a pitchfork and a wheelbarrow, and you'll be ready to hay by hand (bottom).

with the rake so they'll dry evenly. Before the dew drops on the second evening after cutting, I'll rake the swaths into heaps and load the wagon. If I have a partner, I'll rake two swaths together, and one of us will fork while the other drives.

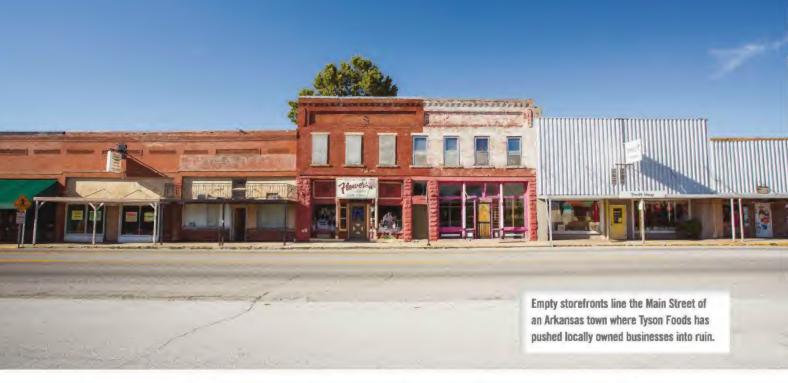
I'm lucky enough to have a large barn with sufficient floor space to store all the bales I need plus a several-ton stack of hay. Unloading the wagon is as simple as backing it into the barn and forking the load into a pile. After you've started the routine, assuming the weather cooperates, you can mow in the morning, rake yesterday's cutting in the evening, and then haul it to the stack in your barn. After a couple of weeks of this, you could have several thousand pounds of fodder.

How Does It Feed?

I'm often asked about the quality of handmade hay compared with machine-made. I haven't tested the protein levels of handmade hay, so I can't offer any data, but my animals relish it. The sheep refuse their round bales of prairie hay as soon as I uncover the stack of handmade hay. I'm sure it has something to do with the sweet clover that grows in some of our fields, as well as the fact that handmade hay spends less time

in the elements drying or waiting to be hauled off. In any event, even if you have a dozen ewes or a family cow to overwinter, you can make most—if not all—of the hay you need by whittling away at the task over a month's time.

Hank Will, editor of Grit (www.Grit.com), goes through almost 20 tons of hay per winter, tending sheep and cattle on his Osage County, Kan., farm.



Another High Cost of Factory-Farmed Meat: THE DEATH OF SMALL TOWNS

The near-monopoly of industrial meat companies prevents healthy competition and crushes small-town economies.

By Christopher Leonard

ne of the biggest myths about U.S. farming is that there's no money in it. Small farming towns, the thinking goes, have died over the last 50 years because there's no profit to be made in this largely backward-looking business. This would be a sad reality if it were true, but it's not. Farming is immensely profitable. The agriculture sector is one of the richest, most productive machines of modern business. The critical question isn't whether there's money in agriculture, but, rather, where does the money go?

Visiting a town like Waldron, Ark., which is home to a massive poultry plant operated by Tyson Foods, supports the misperception. About a million chickens a week may be killed at such a Tyson plant, and the giant slaughterhouse is an impressive industrial machine. Waldron's residents refer to it simply as "The Complex," because the plant isn't just a factory—it's more like an entire small-town economy consolidated onto one property. The several-acre compound contains its own trucking line, feed mill and hatchery, and a slaughterhouse. This complex alone churns out chickens from their beginnings as eggs to finished food products that are worth millions of dollars each year.

Yet Waldron itself seems to be suffocating economically. Many of the businesses along the small downtown strip are boarded up. On Saturday night, Waldron's Main Street is quiet to the

While Tyson profits, rural communities tread water. Or drown.

point of abandonment. The new strip mall downtown is vacant, with black garbage bags peppering its empty parking lot. The sole locus of activity, before it closed in April, was the renovated Scott County Movie Theater, which drew a crowd for its single screening of the night. A young woman named Frankie Watson took tickets, chatting with the clientele. People are so poor in Waldron, Watson says, that the Great Recession of 2007 and 2008 largely passed them over, unnoticed.

The perpetual hard times in small towns such as Waldron stand in stark contrast to the fortunes being made by Tyson Foods and other big food companies that operate on the fringes of rural landscapes. In 2013 alone, Tyson cleared a record \$778 million in pure profit. And that was during a tough year in which consumers were dining out less and buying fewer precooked meals, which are Tyson's real cash cow. Other industrial agriculture companies were just as successful.

This article is based on reporting from my book, The Meat Racket: The Secret Takeover of America's Food Business, which explores how Tyson Foods pioneered the industrial system that now dominates the food market. Today, many companies have adopted the Tyson business model, including Hormel, Swift, Cargill, Smithfield Foods and Foster Farms. Tyson's operations reflect the broader realities of a centralized, highly concentrated meat industry, as well as the effects this system has on small-town economies.

If the money isn't circulating in places like Waldron—if it isn't in the hands of Frankie Watson or the teenagers who visited the theater where she worked—then where has all the money gone?

Exporting Dollars

The money is riding a one-way current. It is generated in the churning machinery of Tyson's slaughterhouse: Cash is minted along the conveyor belts carrying chicken carcasses and in the industrial ovens baking chicken patties. But the money exists only for a moment within Waldron city limits. Almost as soon as it's created, the money rides that same current north to Springdale, Ark., to the treasury of Tyson Foods. It then goes to Wall Street, which acts as a post office address for Tyson's owners. These investors are mostly big institutions, such as universities and mutual funds, and private shareholders. Tyson's profits stay with them.

The communities where our food is raised have been increasingly severed from the giant corporations that profit from processing our food. The average annual per capita income in Waldron and surrounding Scott County has stagnated in Tyson's shadow, growing just 1.4 percent over the last decade to about \$22,000. During that time, Tyson's annual income rose a staggering 245 percent. The same pattern is writ large across other areas where Tyson and other industrial agriculture businesses operate.

While Tyson profits, rural communities tread water. Or drown.

How Did This Happen?

There are deep, structural reasons for this inequity. The meat industry, for example, is controlled by just a handful of giant companies such as Tyson that dominate the U.S. market for beef, pork and chicken. Four companies market about 85 percent of all U.S. beef, for example, while just three companies sell about half the chicken (see the chart on Page 54). The industry is more consolidated today than it has been at any point in U.S. history, largely because a number of companies, including Tyson, went on a massive merger spree during the 1980s and '90s, buying out their competitors and gaining ever more control over the industrial food market. The meat industry is emblematic of other parts of the food system, which is dominated by companies with monopolistic control of markets, whether it is Monsanto in the seed business or Archer Daniels Midland in grain processing.

The effects of this kind of consolidation are entirely predictable. When companies gain power over a market, they use it. Back in the early 1900s, a similar oligarchy of meat companies controlled the industry and earned the nickname the "Meat Trust." These







Large, commercial chicken farms, such as those contracted with Tyson Foods, often have acres devoted to the grower houses, which may house as many as 20,000 chickens each (above). In "Tyson towns," the street names and buildings are marked with the company name and logo (left, top and bottom).



Industrial growers give chickens as little as 130 square inches each — about the size of a manila envelope.

companies depressed the prices they paid farmers for animals, while raising the prices they charged consumers for meat. Tyson Foods is doing the same thing today. But the modern Meat Trust isn't facing significant resistance from government officials.

Things are arguably worse today than they were back in 1910. If the old-school Meat Trust barons were able to tour the headquarters of today's food companies, they would most likely marvel at the new Meat Trust's mastery of the market. These modern meat corporations rely on "vertical integration."

In a nutshell, vertical integration refers to the way companies buy up the outside firms that supply them. When a company becomes vertically integrated, it takes under its control and ownership all the once-independent businesses that previously supported it. Prices go from the competitive open market to corporate rate-setters.

In Tyson's case, the company has swallowed all the businesses that used to make up a small-town economy. It owns the hatchery, the feed mill and the slaughterhouse. It owns the food processing plant where raw meat is packaged or cooked and boxed into ready-to-eat meals, and it owns the trucks that deliver its products to stores and restaurants. While Tyson doesn't directly own most of the farms that supply it with animals, it controls them through the use of restrictive contracts (read

on for more on these). The best way to picture Tyson's vertical integration is to imagine the broad network of small businesses that were once the backbone of rural communities sucked into a single, towering silo. That silo is Tyson Foods. The company controls and owns everything that happens within the fortress-thick walls of Tyson's corporate structure.

Complete Control for 'Efficiency'

Tyson directly controls a network of more than 4,000 factory farms, giving it the power to manipulate chicken supplies almost down to the egg. This vertically integrated system has helped make meat production more efficient—between 1955 and 1982, the amount of time needed to raise a full-grown chicken fell from 73 to 52 days. And the chickens got bigger during that time, expanding from an average 3.1 to 4 pounds.

> Tyson aggressively competed to win a bigger share of the U.S. market. The benefits of this transformation were passed from the farms to the consumers in the form of cheap chicken. But the benefit wasn't free: Each new Tyson farm and each new Tyson factory further ripped the fabric of a profitable sector of the country's economy. Society traded the vibrancy of small to midsized farms and related businesses that competed with one another for an oligarchy of giant companies that now controls the vast majority of the nation's food supply.

> The remaining farms feel this monopolistic power most severely. Declining competition and Tyson's restrictive contracts have trapped chicken farmers over the years. When a farmer is financially abused, he or she often doesn't have the option to work with a different chicken company, because Tyson and other firms operate in

Just a	few compa	inies contro	the vast m	ajority of al	I U.S. meat	and feed pr	ocessing.
	Beef slaughter	Pork slaughter	Chicken slaughter	Turkey slaughter	Animal feed processing	Wet corn processing	Soybean processing
2009	82%	63%	53%	58%	44%	87%	85%
1990	72%	40%	44%	33%	N/A	N/A	N/A
(JBS/ Swift/ Pilgrim's	JBS/ Swift/ Pilgrim's Cargill Smith-field	JBS/ Swift/ Pilgrim's	Jennie-O Cargill Farbest	O'Lakes/ Purina Archer Daniels Midland Cargill J.D. Heiskell	Archer Daniels Midland Cargill Ingredion Inc.	Archer Daniels Midland Cargill Ag. Processing

Counties where Tyson operates are worse off than their neighbors in economic growth, even as Tyson's profits continue to increase.

locations where they are the only game in town. I interviewed one couple who had borrowed \$2 million to build a chicken farm where they raised birds for Tyson. Despite the huge scale of their operation, they couldn't afford health insurance and couldn't even scare up enough cash to fix their rutted driveway that Tyson's giant feed trucks had damaged.

What Tyson Costs Communities

Tyson's income gains are an open book, advertised each quarter when the company releases its earnings to Wall Street investors. The company is reaping record profits of hundreds of millions of dollars every year.

The income patterns of the rural communities where Tyson makes its money are a little more difficult to discern. But it's possible, using government data, to build a map of Tyson's economic footprint. By 2011, Tyson had slaughterhouses and production plants in 79 counties across the United States, with an additional four offices and plants located in big cities. Federal data shows per capita income levels in all of these counties, going back to 1969.

The verdict: Tyson's economic impact is stark.

In 68 percent of the counties where Tyson operates, per capita income has not kept pace with the state average over the last 40 years. The majority of Tyson counties, in other words, were worse off than their neighbors in income growth, even as Tyson's profits increased.

Tyson's defenders might refute this data by pointing out that the company often operates in impoverished rural areas, which should not be expected to outperform the state average. But the mapping analysis does not compare the overall per capita income in Tyson counties with the state averages. What this analysis measures is the rate of income growth in Tyson's counties compared with the rate of income growth in surrounding counties.

One might expect that the economic dynamo that is Tyson Foods, which has created billions of dollars of income for investors over the years, might help boost the income growth rate in the towns that produce the company's actual value: that is, the animals, the feed and the meat. But the data suggests that Tyson is a suffocating economic force on the communities from which it derives its wealth. Without question, the company provides thousands of jobs and steady paychecks. But its cost-cutting ethos and the lack of competition left in the wake of its vertical integration restrain rural income growth. The company has expanded in economically marginal areas, and it has fed off the lowly economic position of small towns and rural communities—rather than improving it.

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If left unchecked, the rules of rural economies will continue to be written by the handful of companies that control them.

What Can Stop Tyson?

Attempts to push back against the market power of Tyson Foods and other companies like it have largely met with failure. In 2010, the Obama administration attempted to pass antitrust reforms that would have brought more transparency to the food markets and potentially given farmers more bargaining power. But lobbying groups, such as the American Meat Institute and the National Chicken Council, spent millions to oppose the changes on Capitol Hill. Secretary of Agriculture Tom Vilsack backtracked rather than confront the big meat companies and their congressional allies.

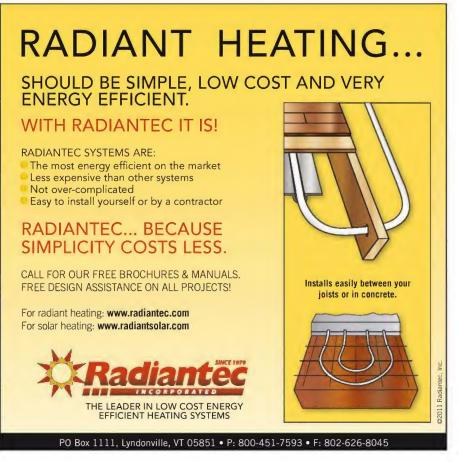
Consequently, that means the rules of rural economies will continue to be written by the handful of companies that control them.

Change will take a lot of time and effort. The entire political equation in Washington will need to shift. Today, no politician in Congress wants to cross the meat lobbyists. Politicians would have to believe that there is a bigger political price to pay for going against consumers and farmers than there is for going against the new Meat Trust.

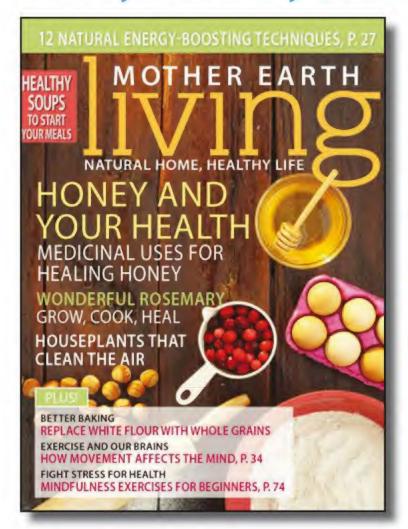
Of course, anyone can choose to opt out of this system, even if it takes a little bit more time, work and money. A vibrant economy of independent meat producers has sprung up around the country, usually selling their products directly to shoppers at local farmers markets or even online. These entrepreneurs raise breeds of chickens, hogs and cattle that are often different from those found on commercial factory farms or feedlots, and they tend to cater to conscientious consumers' desire for animals that have been raised in healthier and more humane living conditions. Locally produced meat is more expensive, but paying that premium price comes with the benefits of health, transparency, and making an economic impact that's an outward ripple instead of just another brick in that towering silo. Shoppers can meet the farmer who raises their food, and ask questions. They know their money will circulate locally, and not be shipped out of town. For a growing number of meat eaters, that premium is well worth the money.

Christopher Leonard is the former national agribusiness reporter for the Associated Press. His work has appeared in Fortune, Slate and The New York Times. His book, The Meat Racket, is available on Page 63 at 25 percent off until Jan. 31, 2015.





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Prevent Predator Problems Witl

Readers share stories of how their brave homestead companions patrol pastures and keep threats at bay.

> By Vicki Mattern Illustrations by Carolyn Guske

or years, Sara and Adam Bryda of BlueMoon-N-Farms in Massachusetts valiantly fought off an assortment of predators determined to chow down on the family's goats, sheep, ducks and chickens. "The hawks were a nightmare, the foxes were chewing on the coops, and a bear was circling the fence lines," Sara says. They tried lights, predator urine, taller fences and deeper wire, but to no avail.

Then, Trinity and Mara - a pair of female Great Pyrenees — entered the scene. Hawks? "Gone, they vanished overnight." Foxes? "We still see their tracks now and then, but they mostly stay far, far away." Bear? "It came by one night, and I heard an explosion of sound. I ran outside, but only saw it running away. Since then we haven't had a bear issue," Sara says. "The girls have kept these creatures away from the livestock when all other methods failed. I don't know what I would do without them."

Homesteaders like Sara are discovering the benefits of employing dogs, donkeys, llamas and other livestock guard animals. Fencing doesn't always keep threats out, and many stock owners are reluctant to use poison or firearms. Looking after livestock can be especially problematic in regions where animal predators have shifted or expanded their ranges in response to changing climate or suburban sprawl. While no protection plan is foolproof, agricultural studies — and Mother Earth News readers—report that certain animals make extremely effective livestock guardians. As a bonus, this age-old arrangement is (usually) nonlethal to wildlife. To gain insight about the advantages and challenges of using animals

for homestead security, we asked Mother Earth News readers to share their experiences. Here's what they had to say.

Ancient Allies

Dogs - the most common farm defenders—have protected humans for thousands of years. Some researchers believe that modern livestock guardian dogs descended from breeds that accompanied nomadic shepherds in the Caucasus as early as the sixth century B.C. The job of these helpers is not to herd (as Border Collies do), but to bond and live with livestock, looking after them night and day. It takes a special dog; temperament varies with breed, but even within breeds, individual personalities make some dogs more suitable sentries than others. (For guides on selecting breeds, see "Resources" on Page 62.) Effective stock guardians share three traits: attentiveness, loyalty and protectiveness.

Attentiveness. Demonstrated by walking and sleeping among the livestock, attentiveness reflects the tight bond that develops between a dog and its wards. Many readers shared incredible stories of this relationship. "I believe my Šarplaninacs know each one of my hundreds of sheep, and they always recognize a new one," says Louise Liebenberg, a rancher in High Prairie, Alberta.

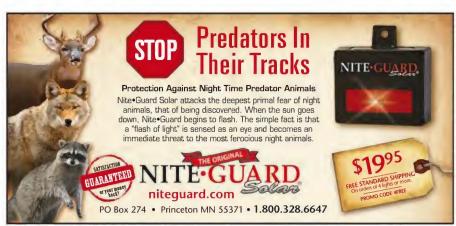
Loyalty. When first introduced to sheep or other livestock, the dog should be curious or submissive—not aggressive or predatory. A loyal dog respects all parts of its master's farm, including other animals. Robyn Poyner of Purdy, Mo., who has kept a variety of guardian breeds for more than 20 years, looks for this trait when adding a new dog to her goat farm. Most of her working dogs are rescues, whose suitability for the work needs to be determined. Poyner introduces the newcomer gradually by confining the dog in a pen for the first week or two. "From there, it can see me interacting with the other dogs and goats," she says. "When I bring over a goat, the dog should show interest or submission by lowering its head. It needs to know that it must protect what's mine."

Protectiveness. If faced with a potential predator, the dog should bark forcefully and place itself between the intruder and the defended animals. Often, a guardian dog's vigilance extends to the family's children, too. "When our son was 8 or 9 years old, our Tibetan Mastiff was his personal bodyguard," says Theresa Wegner of St. James, Mo. "The dog followed him everywhere."

While livestock guardian dogs have been selectively bred for generations, all require training. "One of the biggest mistakes people make is thinking they can just throw the dog out in the field and it will know what to do," says Wegner, who has worked with guardian dogs for 24 years. "I don't advise putting pups in with lambs that are the same size,







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for instance, without supervision. Like other dogs, they need guidance to learn right and wrong.' The dogs must quickly bond with the stock, but safeguarding instincts might not fully develop until maturity. "Set the ground rules early. No chasing or playing with the stock," Poyner says. (Excellent training guides are available; see "Resources" on Page 62.)

Picking a Pasture Pooch

Livestock guardian dog breeds differ in size, coat length and temperament. When choosing a breed, consider the type and number of animal predators in your area, your climate, the terrain, and your own personality. In some cases, several dogs of different breeds will be most effective.

Asian and Eastern European breeds, which require more socialization and assertive handling, are not for everyone. "Know your capabilities," says Poyner. "If you're not assertive, you may not be able to handle the strongerwilled Asian breeds." On the plus side, sharper-tempered dogs are usually more effective against bigger predators.

"The Šarplaninac has a little more attitude," Liebenberg says. "It will stand up to wolves, foxes and any other predator. We know the dogs are successful because of the lack of predation among our stock, when neighbors are losing up to a quarter of theirs." Liebenberg uses eight Šarplaninacs to guard 600 ewes and 40 cows inside pastures surrounded by portable electric fencing. "It's important not to understock your dogs," she says. "A pack of six wolves might not be intimidated by one or two dogs, but the wolves would have to expend a lot more energy to take on an equal number of dogs in a fenced area - and it would be easier for them to go somewhere else."

Keep in mind, however, that you need to provide care and housing for each dog, and feed and veterinary costs can add up quickly. Also, be cautious of imported dogs advertised as "territorial," warns Poyner. Some

With their sizable ears, donkeys have outstanding hearing for detecting disturbances. Also, like other equines, they have an acute sense of smell. Donkeys' eyes are proportionally larger than those of a horse, furnishing this livestock guardian with a wide field of vision.

> have been bred with fighting lines, making them unpredictable and hard to control. "Guardian dogs must have self-control and show a measured response, barking first, then backing off,

before escalating."

In rural Missouri, where coyotes, feral hogs, mountain lions, eagles and bears are a threat, both Wegner and Poyner prefer a mix of "bonders" that hang back and stick with the stock (such as Maremmas and Estrela Mountain Dogs) and stronger perimeter dogs (such as Armenian Gamprs, Central Asian Shepherds and Anatolian Shepherds) to patrol. Several readers report that having dogs of mixed ages can also be useful, as older dogs may show younger ones the ropes.

When researching dogs, you'll notice organizations dedicated to rescuing specific breeds, including Great Pyrenees

> and Anatolian Shepherds. Many readers report excellent results with rescues; the very traits valued in a guardian dog-including nighttime barking and perpetual watchfulness — explain why some are abandoned by urban and suburban families who wanted a mellow indoor companion.

Donkey Defenders

Phyllis Christy and her husband raise goats, chickens, ducks, horses, rabbits and pigs on their 30-acre fenced ranch in

> the heart of New Mexico, where coyotes, stray dogs, raptors, and the occasional bear and mountain lion prowl. The Christys rescued and rehabilitated a donkey that now works as their lookout. "If she sees something, you can hear her distinctive alarm call 2 miles away! Nothing can sneak in." Donkeys are reputed to dislike dogs, but Christy says her guard donkey can accurately discern predatory dogs and coyotes - and will take them on - while tolerating the family dogs.



While not as aggressive

In the Flint Hills of Kansas, Jackie Wilt and her family successfully teamed donkeys with an Anatolian Shepherd to protect goats. With multiple yards and pastures, a division of labor proved a smart strategy. The donkeys guard the outer pastures, while Silas the dog stays close to the goats. "In our 11 years on the farm, we've never lost any livestock to predators," Wilt says.

Some readers report that a donkey can be too rough with young animals. "We've never had that problem, but we move the does that are ready to kid as a precaution," says Wilt. "That's why we got Silas-he was raised with the goats and loves babies!" (For more on donkey home defense, see "Resources" at right.)

Llama Lookouts

The Christys also work with llamas as livestock guardian animals. "Llamas are excellent protectors because they see predators miles away, and sound an alert that all of our animals recognize. They're clean and easy to maintain, too,"

BOOKS

(See Page 63 to order.) Livestock Guardians by Jan Dohner Livestock Protection Dogs by Orysia Dawydiak Storey's Guide to Raising Llamas by Gale Birutta The Donkey Companion by Sue Ann Weaver

ONLINE

Livestock Guardian Dogs Association: www.LGD.org

"Choosing a Livestock Guardian Dog Breed" series by Jan Dohner: http://goo.gl/kxzcDt Learning About LGDs Facebook group:

http://goo.gl/w8LCQ9

"Best Farm Dog Breeds"

from Grit magazine: http://goo.gl/EQgMZV

"Selecting a Guard Llama"

by Jan Dohner: http://goo.gl/dk5YSh

"Anne Hallowell Interview: Working Llamas" by Caleb Regan: http://goo.gl/Sur3Hw

"Guard Donkeys Protect the Herd"

from Grit magazine: http://goo.gl/PS72eE

Phyllis says. After sounding the alarm, the male also herds the goats into their shelter and then stands guard. The Christys enjoy llamas because of their versatility—besides producing wool, llamas clear overgrown brush, pull carts and work as pack animals. (See "Resources" for more on llamas.)

Surprising Sentinels

Atypical guardian animals have shown impressive skills, too. Jeff Rideout in Oconomowoc, Wis., used to lose half of his laying hens to weasels, foxes and other critters. But since adding five geese, he's not lost a one. "Papa gander seems to be doing the job," he says. Sandy Tarnowski in Paulden, Ariz., welcomed a vigilant peahen to her flock of chickens. An unexpected resident, the peahen flew into her yard and now defends the chicks against crows. Meanwhile, in Sandy, Ore.,

Anne Sheldon thinks her good-natured guinea hogs put a stop to the loss of her chickens to predators. Clearly, those predators have discovered what happens when you wrestle with a pig. **

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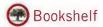
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Author Janisse Ray brings us inspiring stories of ordinary gardeners whose aim is to save time-honored, open-pollinated varieties, such as 'Old Time Tennessee' muskmelon and 'Long Country Longhorn' okra—varieties that will be lost if people don't grow, save and swap the seeds. Ray introduces readers

swap the seeds. Ray introduces readers to dozens of seed savers, such as the eccentric sociology professor she dubs "Tomato Man" and Maine farmer Will Bonsall, the "Noah" of seed saving, who juggles hundreds of seeds, many grown solely by him. #6192 \$17.95



THE ORGANIC SEED GROWER

The Organic Seed Grower is a comprehensive manual for the serious vegetable grower who is interested in growing high-quality seeds using organic farming practices. Detailed profiles for each of the major vegetables provide users with

practical, in-depth knowledge about growing, harvesting and processing seed for a wide range of common and specialty vegetable crops, from Asian greens to zucchini. #6386 \$49.95



GARDEN WISDOM & KNOW-HOW

Garden Wisdom & Know-How is a praccharacter whaten to Rhote-Troto is a practical guide to planting and maintaining a large-scale garden. The chapters are organized by topic—garden techniques and tricks, the flower garden,

the edible garden, container gardening, garden design and landscaping, attracting wildlife, and more—and packed with useful information.

#4522 \$19.95



PLANT BREEDING FOR THE HOME GARDENER

You want to plant, grow and harvest a crop that perfectly matches your tastes and the conditions in your garden. However, you're not likely to find it at your local garden center—you're going to have to create it yourself. With Plant Breeding for the Home Gardener, you'll learn how to set achiev-

able goals in your breeding program, the ins and outs of genetics, how to pick the best parent plants, how to cross-pollinate, the best techniques to use for popular vegetables and flowers, and how to harvest and store seeds. #6681 \$19.95



natural health



NATURAL BEAUTY AT HOME

Beauty in modern America is a multibillion-dollar industry, and consumers spend hundreds of dollars on beauty products only to discover that they aren't satisfactory or effective. This revised second edi-

tion of Natural Beauty at Home contains more than 250 simple but remarkably effective recipes for cleansers and scrubs, toners and skin refreshers, creams, lotions, shampoos, conditioners, and nail- and lip-care treatment.



GO WILD

Harvard Medical School Professor John Ratey, M.D., and journalist Richard Manning investigate the power of living with awareness of our genetic makeup when making choices in the areas of diet, exercise, sleep and more. Go Wild examines how understanding our core

DNA will help us combat modern disease and psychological afflictions, from depression to diabetes to heart disease. #7449 \$27.00



500 TIME-TESTED HOME REMEDIES AND THE SCIENCE BEHIND THEM

Covering everything from insect bites, insomnia and upset stomach to nasal congestion, stress and heart health, this authoritative and comprehensive guide offers easy, effective recipes to bolster your resistance to illness. It shows how to ease aches and

pains, and manage minor ailments naturally. The book's 500 recipes contain readily available, inexpensive and safe ingredients

#7017 \$21.99



nature and environment



COOLER SMARTER

While the routine decisions that shape our days-what to have for dinner, where to shop, how to get to work-may seem small, collectively they have a big effect on global warming. Cooler Smarter offers proven strategies to cut carbon, with chapters on transportation, home energy use,

diet and personal consumption, and tips on how to best influence your workplace, your community and elected officials. #6177 \$21.95



CONSCIOUS CAPITALISM

In this book, Whole Foods Market cofounder John Mackey and Conscious Capitalism Inc. co-founder and professor Raj Sisodia argue for the inherent good of both business and capitalism. Featuring some of today's best-known companies, they illustrate how these two

forces can (and do) work most powerfully to create value for all stakeholders, including customers, employees, suppliers, investors, society and the environment. #6543 \$15.95



BEAUTIFUL AND ABUNDANT

As a writer, farmer and media executive, Bryan Welch is well-known for his optimism, sense of humor, and commitment to empowering people to live their own versions of the good life. His work demonstrates unequivocally that it's

possible to do well in business without destroying natural or human resources. In *Beautiful and Abundant*, Welch outlines his positive views on where we are as a society and what we can do to develop a more sustainable future.

#4802 \$25.95





homesteading and livestock



LIVESTOCK **GUARDIANS**

Highly effective, economical and nonviolent livestock guardians can be the perfect solution to many farmers' predation prob-lems. This definitive resource offers breed-by-breed descriptions, detailed coverage of proper

guardian/livestock bonding, and thorough training and problem-solving advice. The real-life stories of farmers effectively using guard animals will help readers get acquainted with these amazing animals.

#5363 \$24.95



STOREY'S GUIDE TO RAISING LLAMAS

Written for both the novice and expe-Written for both the novice and experienced owner, this 286-page guide will take you from your first steps in acquiring a llama through all aspects of its care. These versatile animals can be used as packing animals, to protect

livestock and to produce fleece.

#2797 \$18.95



FOLKS, THIS AIN'T NORMAL

In Folks, This Ain't Normal, Joel Salatin discusses how far removed we are from the simple, sustainable joy that comes from living close to the land and the people we love. Salatin has many thoughts on what "normal" is, and he

shares practical and philosophical ideas for changing our lives in small ways that can have big impacts.

#5743 \$25.99



POSSUM LIVING

In Possum Living: How to Live Well Without a Job and With (Almost) No Money, author Dolly Freed shares why she decided to shun the rat race and live off the land on a half-acre lot outside of Philadelphia. Originally published in the late 1970s, *Posum Living* is part

philosophical treatise and part down-to-earth how-to, and provides a no-nonsense approach to beating the system and becoming self-sufficient—even in suburbia.

#4513 \$12.95



THE SCYTHE BOOK

In an age when most wonder how they can accomplish anything without the aid of electricity or gasoline, The Scythe Book shows how a traditional hand tool can often outperform "modern" technology. This book tells how you can get a healthful workout

while silently mowing your property using a scythe.

#1441 \$16.50



LIVESTOCK PROTECTION

Ranchers, farmers, hobby-farm owners and anyone with animals will be interested in considering guardian livestock dogs as an ecologically sound and economical alternative for livestock protection. Livestock Protection Dogs covers the selec-

tion, training and care of guardian dogs, and includes profiles of guardian dog breeds.

#7328 \$24.95



THE ENCYCLOPEDIA OF COUNTRY LIVING

The essential resource for modern homesteading, The Encyclopedia of Country Living covers how to cultivate a garden, buy land, bake bread, raise farm animals, make sauage, can peaches, milk a goat, grow herbs,

churn butter, build a chicken coop, cook on a woodstove and so much more!

#6733 \$29.95



THE DONKEY COMPANION

Friendly, dependable and intelligent, donkeys are adept at protecting livestock and pulling loads, yet make spirited racing partners and gentle stable companions. Give your donkey the best possible care, admire his place in

history and laugh at his charms. Training tips, valuable advice, fun facts, quotes and colorful anecdotes are all included in this comprehensive, up-to-date guide to the

#5314 **\$24.95** \$12.86



FARMING WITH NATIVE BENEFICIAL INSECTS

This comprehensive guide shows you how to create a farm or garden habitat that will attract beneficial insects and thereby reduce crop damage from pests without the use of pesticides. Experts from the Xerces Society, a world leader in conservation and environmental

issues, discuss the ecology of native beneficial insects and show you how you can conserve their presence on your land through conservation biocontrol.

#7406 \$24.95



THE SHEER ECSTASY OF BEING A LUNATIC FARMER

Shunned by industrial farmers, vilified by corporate agribusiness, and accused by food police of being a lunatic, farmerentrepreneur Joel Salatin enjoys the sheer ecstasy of being surrounded by happy, frolicking animals, wriggling earth-

worms, and appreciative customers. This book describes the breadth and depth of the paradigm differences between healing and exploitative food systems.



COUNTRY WISDOM & KNOW-HOW

This 476-page book is a compendium of treasured knowledge from hun-dreds of small booklets published as "Country Wisdom Bulletins" in the 1970s. Whether you want to build a stone fence, make strawberry-rhubarb

jam or plant an herb garden, this book will explain how to make your homesteading dreams a reality.



FIELDS OF FARMERS: INTERNING, MENTORING, PARTNERING, **GERMINATING**

The average U.S. farmer is 60 years old, largely because young people can't get into the business, which means old people can't get out. Based on his decades of

experience at Polyface Farm, Joel Salatin digs deep into the problems and solutions surrounding this land- and knowledge-transfer crisis. Fields of Farmers empowers aspiring young farmers, midlife farmers and nonfarming landlords to build regenerative, profitable agricultural enterprises.



KEEPING BEES & MAKING HONEY

Whether you want to start a homebased beekeeping business or simply are interested in a new hobby, you'll become an expert in no time at all. Learn the history of bees

and beekeeping and get the best advice available for safely collecting the honey and wax from your bees

#4692 \$19.99



THE RESILIENT FARM AND HOMESTEAD

Author Ben Falk has written a manual for developing durable, beautiful and highly functional human habitat systems fit to handle an age of rapid transition.

The book covers nearly every strategy
Falk and his team have been testing at the Whole Systems Research Farm over the past decade, as well as experiments from other sites Falk has designed through his off-farm consulting business.

#6757 \$40.00



COMPACT CABINS

Compact Cabins includes 62 designs for cabins ranging from 150 to 1,000 square feet, all of them affordable, comfortable and energy-efficient. For every design, you'll find detailed floor plans as well as innovative suggestions for how to take advantage of every

square inch. The plans are flexible, featuring modular elements that can be mixed and matched to suit your needs. #4436 \$19.95



do it yourself



SHELTERS, SHACKS AND SHANTIES AND HOW TO BUILD THEM

Originally published in 1914, this practical classic is as essential a guide for today's modern homesteader as it was at the turn of the 20th century. Included are instructions for dozens

of worry-free shelters for you to choose from, including a sod house for the lawn, a treetop house, over-water camps, a bog ken and much more.

#4847 \$14.95



DIY WOOD PALLET **PROJECTS**

Featuring 35 creative upcycling ideas, DIY Wood Pallet Projects shows how to transform old wood pallets into beautiful projects that will fill your home and yard with style and personality. If you've never picked up a

power tool, don't worry. The easy, step-by-step instructions will guide you through the entire woodworking process as you re-create all of your favorite designs.

#7419 \$19.99



DIY SOLAR PROJECTS

DIY Solar Projects is filled with step-bystep projects that include solar water heaters, solar battery charging stations, solar-powered lights, photovoltaic shingles that provide supplementary electricity, solar heat pumps, and solar panel kits that generate primary home

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Circle #35; see card pg 81

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Circle #10; see card pg 81



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Circle #39; see card pg 81



A NEW-FASHIONED Food System



Conscientious farmers need to do a better job explaining their proven, cutting-edge methods.

alling something "old-fashioned" might encourage tourists and antique buyers to take note, but it does not captivate the hearts and minds of our mainstream culture.

Too often, the Earth-stewardship movement positions itself as one of returning to a bygone era—to the good old days, pre-electricity and pre-petroleum. While washboards, hoop skirts and hearth cooking may have romantic appeal, living that way doesn't inspire the imagination of today's solution-seekers.

Even the majority of people who yearn for simpler times and a slower lifestyle don't really want to go without electricity and automobiles. Those of us who strive to bring about a sustainable food system need

a message that's dynamic enough to convert fast-food junkies. The industrial food system spends a lot of time and resources refining its message. Along with disparaging the do-it-yourself ethos, pastured livestock and fertilizing with compost, it promotes phrases such as "technology," "futuristic" and "feeding the world."

These catchwords have emotional appeal. Savvy people like to hitch themselves to that kind of engine. Solving problems, meeting needs, going places—these phrases capture hearts and minds. On the other hand, if impressions can kill a movement, stodgy, anti-tech and stuck in a rut are the last ways you want to be seen.

This is a ticklish talking point for those of us dedicated to the proven environ-

mental stewardship principles that predate electricity and petroleum. Part of our worldview is that in a horse race, you bet on the proven winner. For example, carbon-centric soil building beats out using chemical "inputs." But how do you commend this time-honored methodology that so beautifully mimics nature without seeming backward and unscientific?

Let's Reframe Food and Farming

As I see more and more anti-ecology propaganda emanating from industry and government agencies, I lie awake at night trying to figure out positive sound bites for our team. If I decry the giant pork corporation Smithfield's sale to China, I'm either xenophobic or childishly protectionist. If I denounce genetically modified organisms (GMOs), I'm naive and anti-science. If I disagree with a food-safety policy that criminalizes an artisan who sells homemade yogurt to a friend at church, I'm an anarchist.

Societal perception of the sustainability movement's backwardness has roots that run deep. The early-1970s back-to-theland movement that spawned MOTHER EARTH NEWS and many other publications started with the word "back." The struggles that many of those pioneering souls experienced, from backbreaking labor to lost money to broken dreams, testify to the stark reality that truly going back is not something most of us really want to do.

So what kind of messaging - what lexicon—works? It has to be big enough, innovative enough, sacred enough to capture the hearts of all types of people.



Electrified fences mean cattle can be moved frequently — better for the cattle and for the land.

The Pitchfork Pulpit

How do you stop people in their tracks—people content to watch TV every waking hour, depend on pharmaceuticals for every malady, and assume all is well in the world as long as the Kardashians' dysfunction continues to provide conversational material? How do you interrupt that?

I think our side needs to position itself as "new-fashioned." We have said "No" to GMOs, chemical fertilizers, concentrated animal feeding operations (CAFOs) and unpronounceable food additives. These things we oppose have become the old fashion - and we need to call them that. Like ne-

glected buildings, these approaches are outdated and falling apart. Anyone who thinks we can continue inventing drugs faster than microorganisms can adapt is guilty of backward, unscientific thinking—or not much thinking at all.

Let's Upgrade the Language of Stewardship

Here's some language we can use to create contrast between the old and new, and to stimulate conversation and more than passing interest in our solutions.

Integrated food and farming rather than segregated. These are powerful social words. Who wants to be in favor of segregation? Yet, a specific sort of segrega-



Farms that integrate the needs of animals, plants and the soil are fundamentally superior to segregated industrial food systems.

tion is exactly what city ordinances forbidding backyard chickens are about. Not so long ago, chickens turned food scraps into eggs and meat. Now trucks carry our edible scraps to the landfill, where they take up space and create climate-changing methane. We drive to the supermarket to purchase eggs from hens raised motionless in tiny cages and given medicated feed. How could we ever have invented such a senseless, segregated system?

People intuitively know that integrating food and farming practices is the right way to live. When I encounter people who oppose urban chickens, I love to look them in the eye and ask, "Why are you such a segregationist?" Now that gets a reaction.

And getting a reaction is what we need to do, because it means people are paying attention. Powerful, positive words, such as integration, move people. Having developed together for millions of years, food systems that integrate the needs of plants, animals and the soil are fundamentally superior to segregated ones. The more we point that out, the better off we'll all be.

Food systems that caress rather than conquer. Universally, conquistadors and crusaders have negative emotional equity. Who wants to be one of those people—or to be subjected to them? Industrial agriculture has created

700 riparian dead zones in and around the United States, the largest being a New Jersey-sized lifeless area in the Gulf of Mexico. Juxtapose that damage with an Earth-centric farm's tender touch. With an overarching approach of respect, our side caresses ecology to tease abundance out of the Earth. We don't take what we want by wrestling with our ecological womb as if it were a reluctant partner to be forcefully subdued.

Yes, we do run chainsaws and use broadforks and chipper-shredders, but the goal of our disturbance is thoughtful stewardship. Rather than allowing diseased and poorly formed trees to take up space in the forest, we harvest them for firewood and chip the tops for winter livestock bedding in our cowsheds. This carbonaceous cover turns to compost and, in our way of doing things, displaces chemical fertilizer.

In working with natural processes we adopt a common-sense approach to what we do. I remain amazed at the number of farmers I see locating hay feeders and mineral troughs in a valley rather than on a hillside. Animals congregate at these points, which accumulate manure. Why wouldn't you want the blessing of that manure up on higher ground, where its fertility and helpful bacteria could percolate into the soil, instead of down in the valley—the landscape's gutter—where the first rain would wash it away?

Healing rather than hurting. Here at Polyface Farms, our cooler bags are imprinted with the phrase "Healing



Who wants to support an unsustainable industrial model that ignores stewardship of the land and animals? Certainly not the author, shown here with his flock of free-ranging chickens.



Solar-friendly plastics allow growers to extend the season—technology enhancing the simple life.

the planet one bite at a time." Almost everyone would rather heal than harm. Compost heals soil and feeds earthworms; chemical fertilizers scald earthworms, burning them alive. Pastured livestock virtually dance in the field. When you enter a CAFO, you don't see any animals dancing. It's horrifying and terribly sad.

Here's the point: We don't pasture our livestock because it's quaint or old-fashioned. We do it because it makes for happy, healthy animals. It's the new-fashioned way to farm, a smart approach that provides all sorts of benefits, including biomass recycling, exercise, emotional and spiritual fulfillment, and superior nutrition, both for the animals and the humans who ultimately consume them.

On our farm, if I even hear a whisper of, "This is like Grandpa's farm," I'll interrupt and diplomatically start a lesson about how new-fashioned we are. I've even put together a presentation that highlights how our farm is not like Grandpa's was.

Here are some of the new-fashioned objects in my props box:

Electric fence energizer. Grandpa couldn't move herds of cows every day to eat the pasture's biomass and convert the sun's energy into sequestered carbon. Now, with computerized, microchipped energizers, we can move the cattle frequently to spread the manure love.

Polyethylene pipe. Grandpa couldn't easily deliver clean, potable water to the far reaches of his farm. With this rugged, flexible material, we can send water over the

undulations of the land and keep animals from damaging riparian areas. Amazing.

Shade cloth. Grandpa couldn't provide portable shelter for his livestock because roofing was too heavy and susceptible to wind damage. This newfangled material lets the wind blow through while protecting the animals—and the fabric weighs practically nothing.

Solar-friendly plastic polymers for solariums and greenhouses. Grandpa relied solely on the larder for winter food. These new materials enable season extension and passive-solar gain at low cost and high efficiency, which means we can supply our table with fresh-cut harvests year-round.

Rather than promoting a return to old ways, celebrating the solutions in our new-fashioned, technology-supported, integrated world gives us a message of hope and progress to share. We don't want to turn back the clock; we want to be on time for tomorrow's needs and challenges.

Let's stop looking in the rearview mirror. Out with the hurtful, earth-conquering old—let's get on with the life-affirming, health-giving new.

Joel Salatin is an enthusiastic renegade farmer, lecturer and author whose mission in life is for agriculture to take place in partnership with the Earth. His books include *Fields of Farmers*; *Folks, This Ain't Normal*; and *The Sheer Ecstasy of Being a Lunatic Farmer*. See Page 63 to order.



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Efficient Woodpile Design

e observed these pyramid-shaped stacks of firewood while on a tour of Amish farms in southeast Minnesota. Because the woodpiles looked unique and interesting, we duplicated them on our farm. We were surprised at the efficiency of this system for stacking firewood; the woodpiles pictured here each hold between 850 and 1,000 split logs. Not only do our Amish-inspired woodpiles hold more split logs than conventional stacks do, but the firewood repels water and dries out faster, and the piles don't fall or blow over in the wind. We have continued to stack our firewood this way ever since, which is quite simple to do. Start with an unsplit log that's approximately 16 inches long and 8 inches wide. Lean split logs in a circle, two rows deep, against the 16-inch unsplit log. Next, set a couple of split logs on top of the 16-inch log and slightly lean more split logs against them. Continue this process until the top of the pile is out of reach.

> Terry Johnson Hot Springs, South Dakota



This firewood-stacking style is inspired by techniques used in Amish communities in Minnesota. Each stack efficiently holds between 850 and 1,000 split logs.

Give and Give Again

Here's a tip that saves money, reduces waste and will help you recycle wrapping paper. The idea came to me as I was putting together a package for a birthday party and had no giftbasket stuffing. I took all the small scraps of used wrapping paper I'd been saving and ran them through a paper shredder. This made a nice, colorful nest for the cookies and other treats in the gift basket.

> Regina Schwarz Bloomington, Indiana

Fresh Green Onions, **Even During Winter**

I regrow green onions on my windowsill. When you initially purchase them, leave about an inch of the bottom white part for the new onion to sprout from. Simply place the onions in a container of water (that you change every few days), and cut green onions as you need them. Then transplant the onions to an outside bed when the weather warms. Growing onions indoors this way is super-easy and saves us money, plus it's pretty cool to watch the onions grow so quickly.

> Kristy Daigle Thibodaux, Louisiana

Tips for Electric Fence Repair and LED Bulb Installation

I have two tips I'd like to share with you. First, you can use copper wire to fix an electricfence wire. Make a ring with a thick piece of copper wire (or use a copper key ring). Tie one end of the torn electric-fence ribbon to the copper ring. Repeat this process with the other end of the broken ribbon to join both ends together. While this isn't a permanent fix, the copper ring will conduct the electrical current better than aluminum or steel, and this repair will cause little or no voltage loss. Don't forget to turn your electric fence off before you start making these repairs!

My second tip involves LED light bulbs. LED bulbs have the capability to last more than 10 years, but their high price makes it difficult to install many at a time. Start off by using them for the hard-to-reach sockets that need ladders to access, are high on poles, are in nearly inaccessible corners of outbuildings or barns, or are located over stairways. Install an LED light bulb once, and chances are you'll never have to put forth the effort again.

> Dale Yelich Waupaca, Wisconsin

How to Recycle a **Used Freezer**

We have disposed of two defunct chest freezers by offering them to neighboring farms via the bulletin board at the local feed store. We market them as "rodent-proof grain bins."

> Toni Kellers Perkasie, Pennsylvania

Box It Up

If you need free cardboard boxes for moving or dry storage, head to your local copy center. Where there's a copy center, there are large, empty paper boxes, which are strong, have a uniform shape for convenient stacking, and are free. Simply ask the employee behind the counter if you can take any empty paper boxes that would otherwise be thrown out.

For long-term storage, use extra care packing the boxes. Line each box with an open garbage bag before you put anything in. After the box is full, tightly tie the garbage bag closed to keep everything clean and dry. You can toss a dryer sheet in to help keep mice out. Because these boxes are made of cardboard, labeling them with a permanent marker is easy. If you need extra protection,

or if storage conditions are a little damp, then you can slip a second garbage bag over the outside of the box.

Unlike plastic tubs, which are expensive and made of nonrenewable materials, you can pack paper boxes tightly—with their short ends facing out—so critters can't get in between the boxes to nest.

John Hirtle Greenland, New Hampshire

Solar-Powered Emergency Lighting

Ice storms frequently come through our area, so I wanted affordable emergency lighting in case of a power outage. I settled on a 3-watt LED light bulb, wired to a 12-volt, 8-amphour lead-acid battery. The light was \$32 and the battery was \$20. The battery will run for about 32 hours before needing to be recharged. I keep it plugged in so it's ready to go. A good charger costs about \$25.

I liked the backup lighting system so much that I bought a second battery and two more lights. In case of longer power outages, I added a 15-watt monocrystalline solar panel and a high-quality charge controller for about \$100 total. The three lights completely illuminate our safe room, and the solar panel charges the battery in less than a day.

Steve Sorell Berea, Kentucky

For another DIY, solar-powered lighting plan, go to http://goo.gl/bDTSCH. — MOTHER

Tips Worth Their Salt

I grew up in the classroom of my grand-mother's kitchen back in the 1950s and '60s, way before old-fashioned kitchen techniques came in vogue. We were always canning, putting up something, making do with something else, and using every bit of the yard for either beautifying our world or feeding our family. The kitchen was the center of our world, and everything seemed to either begin or end in that kitchen. It was full of everything we needed, sans the fancy gadgets seen in kitchens today.

We had delicious, simple food without having to buy a new ingredient for each recipe. Our recipes were memorized or written on index cards that I now cherish like gold. Each card had comments and sug-

gestions for how to improve the recipe, or compliments on what worked well. I was the sous chef, cutting vegetables, measuring ingredients, getting eggs to room temperature and preheating the oven. Everyone had a job to do, but it wasn't really work, it was community—family time to talk and visit, to catch up with one another before life ran by too fast.

One of the most frequently used ingredients in our family recipes was salt. Because we cooked from scratch, salt was not already in most of our ingredients, and we had better control over how much sodium each dish contained. We bought salt in bulk, and we added a teaspoon of rice to the salt shaker to prevent the salt from caking up in our humid Southern kitchen. Here are 12 examples of the myriad ways we put salt to work in my grandmother's kitchen:

• We sprinkled salt on frying pans to prevent fish—especially skinned fish—from sticking to the pan.

We soaked our turkeys and rabbits in salt brine before baking.

We dipped our wet hands in salt to help us get a good grip on fish before we cleaned them.

4 We scoured fishy pans with salt water before rinsing them in fresh water to get rid of any fish smells.

We knew that corn on the cob would be softer if we added salt to the water after it started boiling.

6 Before baking potatoes, we soaked them in lukewarm salt water for 10 minutes before rinsing and baking the spuds in the oven. This resulted in softer potatoes that baked faster.

We pickled with plain salt instead of iodized salt, which caused darkening.

3 We added a dash of salt to the pan before making fried apples, because it left the apples a bit more candied.

• We poached egg whites in salt water to make them firmer.

Sweet Memories for a Sweet Tooth

Family recipes have long sweetened our holidays and provided fun bonding time. Here are two of our favorite homemade candy recipes to make and share with friends.

Baked Fudge Recipe

4 eggs, beaten

1 cup (2 sticks) butter, melted

2 cups sugar

2 tsp vanilla

100

1/2 cup flour

3/4 cup nuts, chopped 1/2 cup cocoa powder

Mix all ingredients in the order listed. Pour batter into a greased 9-by-13-inch pan and bake at 300 degrees Fahrenheit for 45 minutes to 1 hour. Let cool, then cut into 1-by-1-inch squares. *Yield: 117 fudge squares*.



Gumdrops Recipe

4 tbsp gelatin

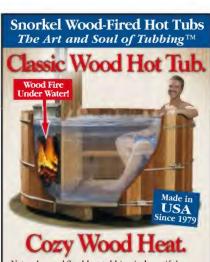
1 cup cold water

3 cups fruit juice Vegetable coloring

2 cups sugar

Soak gelatin in cold water for 5 minutes. Bring fruit juice to a boil. Add the gelatin to the boiling fruit juice, stirring constantly. Add 2 drops of vegetable coloring, if desired. Pour into a greased, 9-by-13-inch cake pan and let stand overnight in your refrigerator. The next morning, cut into 1-by-1inch squares; toss squares in granulated sugar. Let stand 2 days to crystallize. Yield: 117 gumdrops.

> Audrey Carli Iron River, Michigan



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Upcycled, Homemade 'Crocs'

Rubber farm boots eventually wear out and develop cracks or holes that make them worthless for keeping feet dry. However, in many cases, you can salvage the rubber boots for a second, lighter-duty use by cutting off the tops and using what remains as a

convenient pair of homemade slippers. We love to wear these refashioned slip-on shoes around the house and for short trips to the kitchen garden (think homemade Crocs), and we've even been known to wear them to town. This gets another use out of a resource that otherwise might go to a landfill. It also saves time and money on shoe shopping, but perhaps the best part is that the "new" homemade slippers are already perfectly broken in for our feet!

Cutting off the top of each boot does require cautiously handling a sharp implement. We've found that a sturdy pair of scissors can tackle the job after we make an initial slit with a knife.

> Joanna and Eric Reuter Columbia, Missouri



10 We didn't add salt to eggs before making omelets because it made them watery.

We mixed a bit of salt, sugar and cornmeal with honey to make a good homemade facial scrub (if rinsed off thoroughly).

We cleaned knives with salt to keep them from tarnishing as quickly.

As you can tell, salt was fundamental in our lives. We didn't add too much salt to the food, allowing each person to add as desired at the table. But we knew how important it was, believing the adage that each person was worth her salt! What about vinegar? Well, don't get me started on vinegar. It was

invaluable for cleaning, cooking and making some mighty fine pickles.

> Malinda Fillingim Leland, North Carolina

We Pay for Top Tips

Do you have handy home, farm or garden advice? We pay \$25 to \$100 for each tip we publish, plus \$25 for each photo or video we use. Send your tips to Letters@ MotherEarthNews.com.

Unique Cold-Frame Design

A neighbor of mine remodeled his house and I noticed a couple of used skylights near his dumpster. He was happy to let me have them. I laid some cinder blocks in a rectangle, topped them off with bricks and filled the bed with soil. Next, I laid a skylight on top of the cinder blocks, unhinged, so I can simply lift it off when needed.

I didn't use mortar to cement the bricks together with this cold-frame design, so this way I can remove a few bricks for ventilation, or add a second row of bricks as the seedlings grow and the frame needs to be heightened. After I transplant my seedlings into the garden, I use the soil and box as a planter for wildflowers.

> Gregory Doyle Scituate, Massachusetts



MOTHER EARTH NEWS STATEMENT OF OWNERSHIP

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I certify that the statements made by me above are complete and correct.

L. Bryan Welch, Publisher



Circle #23; see card pg 81





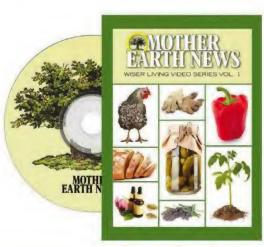


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MOTHER EARTH NEWS

Best Grow Lights for Starting Seeds Indoors

I want to start my own vegetable seedlings this year. Will I need special light bulbs?

Suitable supplemental lighting is better for starting seeds than the light coming through most windows would be. A setup of lights will allow you to grow a much wider range of vegetable varieties, which will make your garden even more interesting and fun. Until recently, most seed starters used inexpensive fluorescent T12 shop lights, with the height of the lights adjusted so the plants were very close to the bulbs—within a half-inch for full-sun plants, such as tomatoes and peppers.

But two new and better choices, T8 and T5 bulbs, are now available. In fluorescent-light lingo, the "T" stands for "tube," and the number represents the bulb's diameter. Old-line T12 fluorescent bulbs are still cheap and easy to find, but for a few dollars more per bulb, you could upgrade to more slender T8 bulbs, which are up to 40 percent more efficient. Plants get plenty of light when grown within 2 inches beneath T8 bulbs. You can usually find a 4-foot-long, Energy Star-certified, twobulb T8 fixture at retail stores for about \$20, plus another \$10 for the bulbs.

Many garden-supply stores now offer grow lights that use even skinnier T5 bulbs, sometimes called "high output" (HO) fluorescents. Less glass is required in their manufacturing, and T5 bulbs are 9 percent more efficient than T8 bulbs and 51 percent more efficient than the old T12s. While T5s set the standard for light output and energy efficiency, they may be glaringly bright if not equipped with a reflective hood. Plant height must be closely monitored, too, with no less than 3 inches of space between the bulbs and the tops of the plants. Some people find the narrow T5 bulbs too delicate to handle in 4-foot lengths, and instead choose shorter, 2-foot bulbs.

- Barbara Pleasant



Sprouting seeds will flourish beneath bright, efficient fluorescent bulbs.

Choose a Backup Generator for Emergencies

I want to buy a backup generator in case of a power outage. How do I go about choosing one?

A good generator is relatively inexpensive insurance against loss of household power. To determine which type of generator would be best for you, consider the following questions.

How much power do you really need? Some appliances require more start-up power than

their specified ratings indicate. Generator output is measured in watts, a unit of power calculated by multiplying electrical flow rate (amps) by electrical pressure (volts). One typical household outlet, for example, delivers a maximum of 1,800 watts (15 amps x 120 volts), or the equivalent of only a very small portable generator. Many people buy a small generator and regret it later because they didn't realize how much power they'd actually need.

How often do you expect to use it? "Generator output" usually refers to maximum output for

a short-term period only. In practice, most generators can sustain only 80 percent of their maximum rating for the long haul. If you continuously demand more than this, you'll shorten the life of your investment. If not stated otherwise, always consider the advertised generator output as overly optimistic, and apply the 80 percent rule. Unless you have particularly frugal power requirements, you'll likely find a 5,000-watt gasoline generator to be a good basic size.

What will you use it for? Any appliance with a motor creates an inductive electrical load. This





Circle #28; see card pg 81



Circle #2; see card pg 81

means its energy demand skyrockets for the first second or two after start-up. You should account for two to three times as many watts for start-up compared with the watts required for running the appliance. In cases where no wattage consumption figure is stamped on an item, use the "volts x amps = watts" formula.

As you do the math, you may discover that you want more than the 5,000 watts of backup power provided by a standard gasoline generator. If that's the case, you should consider a stationary generator wired directly into your home's electrical system. Stationary units cost more than portables, but they deliver more power and convenience.

What kind of fuel will you use? Some stationary generators are configured to run on pipedin supplies of natural gas. Most portable generators run on gasoline, but propane- and diesel-fueled models have advantages, too.

Propane can be more expensive than other fuel options, but it's also more chemically stable than gasoline or diesel. You can expect two years of reliable shelf life by adding a stabilizer to gas or diesel fuel, but propane never goes stale, so a propane system is worth considering if you'll use your generator for emergency power only.

Diesel engines are traditionally found only on large, stationary generators, but smaller

Change Furnace Filters to Keep Air Clean

How often should I swap out my furnace filter, and which types of furnace filters are best?

A furnace filter removes dust, dander and other large particulates from the air in our homes when either the furnace or central air conditioner is running, as the two systems share common ductwork for air distribution. Particulate buildup reduces a filter's effectiveness and makes the fan work harder, shortening its life span. Both the furnace and air conditioner will operate less efficiently and may require more frequent servicing if the filter is too clogged.

The frequency at which you should change your furnace filter depends on the number of people who live in the home; how many furry pets reside indoors; the presence of smoke from tobacco, woodstoves or other sources; how dusty the environment is; the type of furnace filter; and the thickness of the filter.

If you have multiple fur-shedding pets, you live along a dusty road, or several smokers live in the residence, count on changing a 1-inch or 2-inch air filter every month. You'll likely need to replace a 4-inch filter every two months and a 5-inch filter every three months.

If you have one pet, your home experiences only moderate dust accumulation, or no more than one smoker lives in the residence, filter replacement can shift to two, four and six months, respectively.

If the air in your home is mostly free of dust and completely free of pet dander and smoke, you can replace your filter just once per year.

Some filters are more efficient at filtering air



Keep the air you breathe free of debris by regularly replacing filters.

than others. My advice is to buy washable furnace filters that offer the highest level of filtration. Make certain the filter fits exactly. Check your filter every month for the first year after installation. If you find that your filter gets dirty faster than you anticipated, plan to replace it more often in the future.

-Dan Chiras

Ask Our Experts

diesel systems in the 4,000-watt range are now appearing on the market. Diesel engines can be harder to start and usually cost more than comparable gasoline motors, but they last longer, especially under continuous use.

How will you get the power from the generator to items in your home? Extension cords are easy to use, though you can only use them with items that have a plug-in cord. If you have a generator that puts out 3,500 watts or more, it's worth creating a connection directly to your household wiring so that extension cords are unnecessary. By law, any such direct connection must pass through a transfer switch, which ensures that your home is

either connected to the grid or to your generator, but never to both at the same time.

For more in-depth guidance and advice. read "Emergency Generators: A Great Source for Backup Power" at http://goo.gl/UJPfP5.

-Steve Maxwell

Stumped about something in your home or on your homestead? Email your questions to AskOurExperts@ MotherEarthNews.com, or write to Ask Our Experts; Mother Earth News; 1503 SW 42nd St.; Topeka, KS 66609.

The Hygiene Hypothesis: Why It May Be OK to Get a Little Dirty

I've heard that the "hygiene hypothesis" might explain the increase in asthma and allergy rates. What is this theory, and how does it work?

Our immune systems were designed to cope with a germy world. Unless you live on a farm, postindustrial life can be relatively sterile. Theoretically, exposure to microbes and parasitic worms early in life matures the immune system, priming it to fight microbes rather than such innocuous things as pollen and dander. According to the hygiene hypothesis, a lack of exposure tips the immune system toward inflammation and allergic tendencies, as does the use of antibiotics in the first year of life. In addition, children born by caesarean section face a higher risk of allergies and asthma, because passage through the birth canal inoculates infants with bacteria that normally populate skin, the upper respiratory tract, guts and other organs. The development of healthy gut bacteria positively shapes the immune system.

Proponents of the hypothesis point out that kids who attend day care early in life, grow up in larger families, or spend time around barnyard animals (or at least dogs) are less likely to develop asthma, hay fever and eczema. Critics of the hygiene hypothesis respond that asthma rates have also soared in recent years among children in cities, who may also be exposed to different kinds of dirt and germs. Other possible factors contributing to higher allergy rates in the United States include increased consumption of junk food, inactivity and obesity.



Children who keep company with furry friends are less likely to develop asthma and eczema.

We can all agree on the benefits of clean drinking water and modern sanitation methods. Meanwhile, here's how you can expose yourself and your family to reasonable levels of germs: Spend time outdoors. Garden. Play with a dog. Afterward, wash up with plain soap and water. If you already have asthma aggravated by dust mites, reduce symptoms by keeping a clean house and enclosing pillows and mattresses in airtight covers.

—Linda B. White, M.D., 500 Time-Tested Home Remedies and the Science Behind Them (See Page 63 to order.)











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(CONTINUED FROM PAGE 10)

education. Mother Earth News is a great resource for that.

It's challenging at times, but limiting purchases from big-box stores and cutting out junk food helps me free up money for healthier options. I grow what food I can. I have containers for growing herbs and catching rainwater, and I do all of this on a small city lot using free and recycled materials.

We need to reshape a food system that has been taken over by multibillion-dollar conglomerates, and it's going to take all of us-no matter who we are or where we come from—using our brains and our brawn to do so. We can choose to grow and prepare food with love and thankfulness, and then share our knowledge with others who need and want it.

> Sandy McWhorter Knoxville, Tennessee

Image Check

I have thought for a while that MOTHER EARTH News does not give enough recognition to

Remembering PJ

PJ Benet-Davis, a longtime reader of Mother Earth News, passed away peacefully in her sleep on Aug. 11, 2014, still full of dreams of chickens and goats and gardens and compost piles. I (her husband) will miss this good woman forever.

> Rich Landers Eureka, Nevada



the millions of people of color in the United States. There is a movement and a market taking place among us that you could be a part of. You would be wise to change your elitist, white-folk image. I'm a longtime subscriber just trying to pull your coat with love.

> Abubakr M. Karim Charlotte, North Carolina

Follow Your Food Dollars

I want to thank Joel Salatin for his article "Fighting for a Sane Food System" (October/ November 2014). I've been trying to get the concept of food choices across to people for decades, and, as Salatin did, I often use coffee as an example.

Instead of just thinking you're buying a \$5 cup of coffee, consider the amount of coffee you're paying for in terms of gallons. After all, you buy heating fuel, gas and milk in gallons. Five dollars for a single coffee comes to more than \$50 per gallon. Suddenly that cup of joe sounds mighty expensive.

> Josephine Howland Albany, New Hampshire

Diet Debate

Although Richard Manning's article addressed some important issues surrounding industrial agriculture ("Hidden Downsides of the Green Revolution," June/July 2014), he made several arguments that are not supported by









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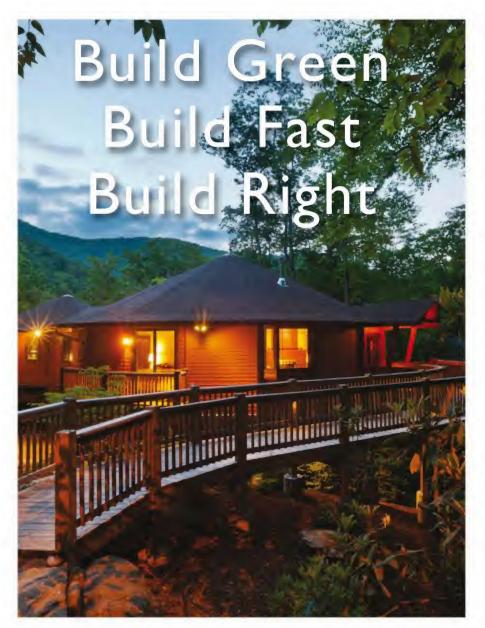
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my reading of nutritional science. A highcarbohydrate diet without animal protein and refined foods (oil, sugar, white flour) is the only diet that has for decades been proved to prevent and even reverse heart disease, Type 2 diabetes and obesity.

Whole grains, beans, corn and potatoes are the basis of the world's healthiest diets. Whole plant foods contain all the protein, calcium, iron and healthy fats we need. Sadly, the majority of grains, beans and corn that promote human health are used to produce meat, corn syrup, oils and biofuels. Finally, cholesterol is vital, but our bodies produce it. Cholesterol from foods is unnecessary and potentially dangerous.

> Donna S. Lepley Tucson, Arizona

That is the pretty straightforward view as developed over a couple of generations in nutrition science programs at land-grand universities. However, an emerging and compelling body of research counters this view. The New York Times reported on a recent study, backed by no less than the National Institutes of Health, that showed that people who avoid carbohydrates and eat more fat-even saturated fat—lose more body fat and have fewer cardiovascular risks than people who follow the low-fat diet (go to http://goo.gl/6cetUK). I've looked at much of the research on both sides, and I am firmly in the low-carb camp.—Richard Manning

Freedom to Create

I'm surprised you're still receiving letters regarding the article about remaining childless ("Making a Green Choice: Childfree Living," February/March 2014). I'm old enough to remember the days when women were criticized if they admitted they didn't want to have children. How crazy that seems now.

I have four children. One has a child, one does not want children, and two are looking forward to having children. In my uneducated opinion, all people want to be creative and want others to admire what they create. It could be their artwork, their garden or their children. As humans, we have a need to create, and it's each individual's decision as to what he or she wants to create. For your article to be so controversial shows that we're still judging others according to our own principles instead of simply appreciating the

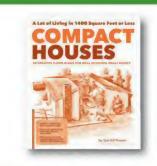


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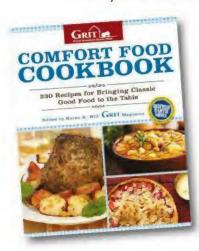
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different ways in which people create. I read MOTHER EARTH NEWS to get ideas for what I can create next, and no one should tell me which ideas I should follow.

> Kaethe Phelps Petaluma, California

Tackling the Tough Topics

Thank you for all the information you publish on the hows, whys, benefits and economics of Earth-friendly, sustainable living. I am nearly 80 years old, and I remember when, before World War II, most of the "hows" were common parts of everyday living.

You are to be highly commended for tackling two of today's most crucial topics that are affecting the quality of human life, and, perhaps, even the continued existence of life on this planet:

- 1. Taking issue with the genetically modified foods being fabricated by certain multinational mega-corporations for profit, as well as the disturbing business tactics those companies use to promote these products as food sources for humans.
- 2. Looking at the issues being brought to the fore by the population explosion of the past 50 years. In my lifetime, the world population has tripled from about 2 billion to more than 7 billion. Bryan Welch's article "A Vision for a Better World" (October/November 2013) struck a chord with me—in particular, his mention of the inevitable question from critics as to who to kill. Of course, his answer—that the human population will begin to decrease if most of us choose to reproduce ourselves only once—was correct and worded politely. But part of the answer, too, is that if we don't do away with our apathetic mindset and start working to reduce our population over the next few generations, we'll probably end up lobbing nuclear or chemical weapons at each other, and then we won't have to worry about who to kill-we'll all be dead, and this beautiful planet will be a barren mud ball. At least then we won't have to worry about GMO-contaminated foods.

Thank you for your campaign to bring this potential disaster to the public forum. At my age, I don't think I'll live to see it resolved either way, but I hope to hand on to my grandchildren and great-grandchildren our world as beautiful as it was when I received it.

> Mary Hart Pousset Brighton, Michigan



Chemical Correction

I ask that you make an immediate correction to your article "Another Study Links Bee Decline to Pesticides" (Green Gazette, October/November 2014). Cyantraniliprole is incorrectly identified as a neonicotinoid. DuPont does not manufacture neonicotinoids.

Cyantraniliprole is a diamide insecticide. When used according to the label directions for the intended applications and crops, including according to instructions provided to mitigate risk, cyantraniliprole products will not adversely impact bee populations.

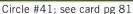
> Gregg M. Schmidt DuPont Public Affairs Wilmington, Delaware

We regret our error. As you might guess, not everyone agrees with DuPont's claims that the new diamide insecticides are perfectly safe. In 2013, the Center for Food Safety and the American Bird Conservancy submitted 18 pages of comments to the Environmental Protection Agency (EPA), opposing registration of cyantraniliprole. The EPA chose to ignore the groups' concerns and registered this new insecticide. Last summer, the Center for Biological Diversity, the Center for Food Safety, Defenders of Wildlife, and Earthjustice sued the EPA, arguing that cyantraniliprole should not have been registered. As chemical companies continue to push more potent and persistent systemic pesticides (both neonicotinoids and diamides) into widespread use, researchers are now warning that the cumulative effects of sublethal doses may include the disruption of food chains because of disease outbreaks in bats and birds, as well as harm to bees, butterflies, other insects and even mammals. (Read the report, "Immune Suppression by Neonicotinoid Insecticides at the Root of Global Wildlife Declines," at http://goo.gl/YyCAgT.)-MOTHER

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Most of these people I met in my parents living room: Dr. Norman Vincent Peale, James Cash Penney, Lowell Thomas, Charles E. Wilson (Chairman of GE, FDR appointed him head of the War Production Board WW2), Carrie Chapman Catt (Woman Suffragist), Dr. James E. West (Chief Scout Executive, Boy Scouts of America), William Frank Snyder (FDR's lawyer and close friend, who also had polio, wrote his will and handled his financial affairs including Mrs. Delano, complaining to my mother: "The Roosevelt's are using my pool!"). "Buffalo Bob" Smith (It's Howdy Doody Time!). C.L. Lowes: (My grandfather started BOND

BREAD. Buying trainloads of flour for 50 plants, he waited for the price of flour to go UP so farmers could make a fair profit...he was unique! General Baking Co became General Host..."Twinkies") Richard Ellis (my brother, commercial Real Estate) and many others!

After my father died, Dr. Peale said the eulogy and inspired me to increase water properties back to what it was before "The Flood" (living to Biblical ages). After "The Flood" they didn't live as long!

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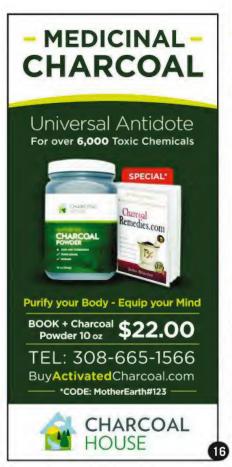
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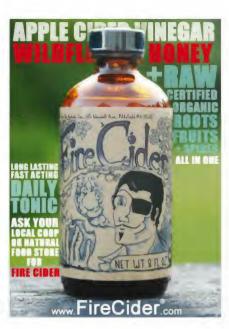
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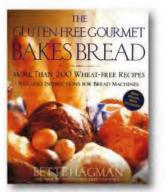
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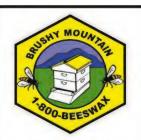
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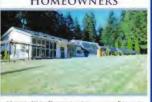
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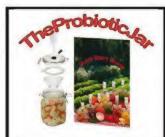
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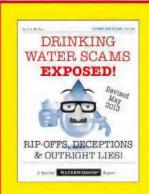
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